



Infrastructure, buildings, environment, communications

Mr. Kenneth Herstowski, P.E.
United States Environmental Protection Agency
Region 7
901 N. Fifth Street
Kansas City, KS 66101

Subject: Submittal of Corrective Measures Implementation Work Plans for
Operable Unit No. 2 and Operable Unit No. 3 at the 9th and Webster Streets Site
(Omaha Shops), Omaha, Nebraska (USEPA ID No. NED000829754)

Dear Mr. Herstowski:

On behalf of Union Pacific Railroad (UPRR), please find enclosed three (3) copies of
the below Work Plans relative to the 9th and Webster Streets Site in Omaha
Nebraska:

- Operable Unit No. 2 Corrective Measures Implementation Work Plan.
- Operable Unit No. 3 Corrective Measures Implementation Work Plan.
- Site-Wide Sampling and Analysis Plan and Site-Wide Quality Assurance
Project Plan for Corrective Measures Implementation at OU2 and OU3.

Please note that the Site-Wide Sampling and Analysis Plan and the Quality
Assurance Project Plan are referenced as Appendix A and Appendix B, respectively,
in both the referenced Corrective Measures Implementation Work Plans but were
submitted in a separate document binder.

Please direct any questions regarding the above Work Plans directly to
Mr. Jeff McDermott of the Union Pacific Railroad at (402) 544-3675.

Sincerely,

ARCADIS


John P. Shonfelt, P.G.
Senior Project Manager

Attachment

Copies:

Jeff McDermott (Union Pacific Railroad)
Bill Gidley (Nebraska Department of Environmental Quality)
Bob Stubbe (City of Omaha Public Works Department)

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Union Pacific Railroad Company

**Operable Unit No. 2
Corrective Measures Implementation
Work Plan**

Union Pacific Railroad
Omaha Shops
9th and Webster Streets
Omaha, Nebraska

April 22, 2008

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**Operable Unit No. 2
Corrective Measures
Implementation Work Plan**

UPRR - Omaha Shops

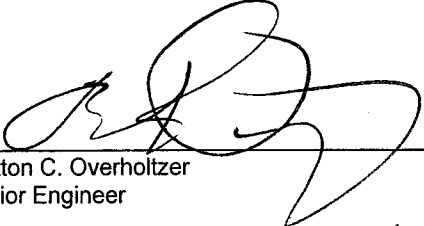
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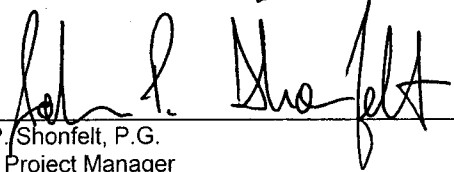
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**OPERABLE UNIT No. 2
CORRECTIVE MEASURES IMPLEMENTATION
WORK PLAN**

**UNION PACIFIC RAILROAD
OMAHA SHOPS**

Union Pacific Railroad Company
1400 Douglas Street
Omaha, Nebraska 68179-1030

CERTIFICATION

"I certify that this document and all attachments hereto were prepared under my direction or supervision. To the best of my knowledge, information, and belief, the information submitted is true, accurate, and complete. I am aware that there are criminal penalties for knowingly providing false information."

Signature:

Jeffrey D. McDermott

Name:

Jeffrey D. McDermott

Title:

Manager, Environmental Site Remediation

Date:

April 18, 2008

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- D Uniform Hazardous Waste Manifest
- E Model Restrictive Covenant Language Field Inspection Form
- F Field Inspection Form

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Acronyms and Abbreviations

ACM	Asbestos-Containing Material
AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirements
bgs	below ground surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CMS	Corrective Measures Study
CMI	Corrective Measures Implementation
COPCs	Chemicals of Potential Concern
DOT	Department of Transportation
ET	Exposure Time
FS	Feasibility Study
HI	Hazard Index
HQ	Hazard Quotient
IM	Interim Measures
J (J)	Qualifier indicating "estimated data" value
LCS	Laboratory control sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
msl	mean sea level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
ND	Non-detect
NDEC	Nebraska Department of Environmental Control
NDEQ	Nebraska Department of Environmental Quality
OU1	Operable Unit 1
OU2	Operable Unit 2
OU3	Operable Unit 3
Order	Administrative Order on Consent
OVA	Organic Vapor Analyzer
%R	Percent Recovery
PCB	Polychlorinated Biphenyl
PID	Photoionization Detector
ppm	parts per million
PRG	Preliminary Remediation Goal
QA/QC	Quality Assurance/Quality Control
R (R)	Qualifier indicating "rejected data" value
RAC	Remedial Action Class
RAPMA	Remedial Action Plan Monitoring Act
RBCs	Risk-Based Concentrations

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RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RL	Reporting Limit
RME	Reasonable Maximum Exposure
RPD	Relative Percent Difference
SARA	Superfund Amendments and Reauthorization Act
SCS	Soil Conservation Service
SVOCs	Semi-Volatile Organic Compounds
SWMU	Solid Waste Management Unit
TCLP	Toxicity Characteristic Leaching Procedure
U (U)	Qualifier indicating "not detected" data value
UCL	Upper Confidence Limit
UPRR	Union Pacific Railroad Company
URS	URS Corporation
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds

1. Introduction

1.1 Purpose

This document presents a Corrective Measure Implementation (CMI) Work Plan for Operable Unit No. 2 (OU2) at the 9th and Webster Streets site (USEPA ID No. NED000829754), which is commonly referred to as the Former Omaha Shops site located in Omaha, Nebraska. The purpose of this CMI Work Plan is to provide the technical guidance and procedures to implement the United States Environmental Protection Agency (USEPA) required Corrective Measures at OU2 if the property is redeveloped as outlined in the Final Corrective Measures Decision Document (USEPA, 2007).

Interim Measures, including soil removal, performed at OU2 have removed contaminated soil to stabilize the facility so that, in its current state and use by Union Pacific Railroad (UPRR), no immediate action is needed to remove additional volumes of contaminated soil (USEPA, 2007a). This CMI Work Plan presents details of additional characterization and potential soil removal and waste management that will be required if redevelopment of portions of OU2 is contemplated.

Specifically, this OU2 CMI Work Plan outlines the steps that are required to:

- Screen the soil in the parcel proposed for redevelopment to determine the presence of constituents above risk-based cleanup goals;
- Perform Pre-Development Investigations to determine the extent of soil above cleanup goals, and assess the requirement for excavation of impacted soil prior to development;
- Properly handle and dispose of the impacted soil to comply with local, state and federal regulations;
- Implement institutional controls to prevent or limit exposure to impacted soil above cleanup levels; and
- Perform long-term monitoring, maintenance and reporting to document the continued effectiveness of the soil removal and institutional controls.

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Operable Unit No. 2 Corrective Measures Implementation Work Plan

Union Pacific Railroad
Omaha Shops
9th and Webster Streets
Omaha, Nebraska

1.2 History and Background

The UPRR former Omaha Shops facility was centered near 9th and Webster Streets in Omaha, Nebraska (North 41° 15' 58" latitude, West 95° 55' 40" longitude). The legal description of the facility is Township 15 North, Range 13 East, Section 22. The former Omaha Shops encompassed approximately 210 acres north of downtown Omaha and just west of the Missouri River in the floodplain (Figure 1-1 and Figure 1-2).

The Omaha Shops facility included various buildings and production support areas, each having a function in past operations of the facility. The Omaha Shops were in operation for approximately 100 years, with principal functions as a railroad fueling facility, repair shop, paint shop, and car body repair shop for UPRR's locomotive and car fleet.

UPRR used steam engines from the 1860s until the mid-1950s. The original steam engines were fueled by burning wood, coal, fuel oil, and petroleum-based fuel. In the mid-1950s, diesel power became the predominant source of power for train locomotives. During that time, the entire Omaha Shops facility was converted from handling steam engines to diesel engines.

From the 1950s to 1988, the site was a major overhaul and maintenance facility for UPRR. In 1988, most of the operations, except the print shop and the car shop, moved to Little Rock, Arkansas. After the operations were moved in 1988, facility demolition began. Currently, all of the buildings have been removed and portions of the property are undergoing redevelopment.

1.3 Regulatory History

The primary federal legislation governing disposal of hazardous waste is the Resources Conservation and Recovery Act (RCRA) of 1976, as amended. In August, 1980, pursuant to Section 3010 of RCRA, UPRR notified the USEPA that hazardous wastes were generated, stored, or disposed of at the Omaha Shops. In November 1980, UPRR submitted a RCRA Part A permit application, requesting permission to store hazardous waste at the Omaha Shops. The existence of the facility on November 19, 1980, and the submittal of the Part A permit application subjected Omaha Shops to the requirements applicable to RCRA interim status facilities. In January 1981, the USEPA formally granted interim status to the Omaha Shops, assigning the facility RCRA identification number NED000829754.

In May 1982, UPRR requested that USEPA terminate the Omaha Shops' interim status as a hazardous waste storage facility. This change in status request resulted from changes in UPRR's operations at the Omaha Shops. UPRR's request indicated that the Omaha Shops were operating as a generator instead of a storage facility. USEPA and the Nebraska Department of Environmental Control ([NDEC], now known as the Nebraska Department of Environmental Quality [NDEQ]), continued to inspect the facility through 1988. Based on an extensive file review, USEPA determined that interim status as a RCRA storage facility was never officially terminated for the Omaha Shops (Tetra Tech, 1998).

The Omaha Shops facility has been the subject of numerous environmental investigations since 1987, which are described in greater detail in the OU2 RFI Report (URS, 2001). In June 1998, a RCRA Facility Assessment (RFA), typically an early step in the RCRA corrective action process, was completed by the USEPA for the Omaha Shops (Tetra Tech, 1998). The RFA identified 33 Solid Waste Management Units (SWMUs) and 18 Areas of Concern (AOCs) at the Omaha Shops.

1.3.1 Administrative Order on Consent

Based on the results of the RFA and the Omaha Shops former classification as an interim status RCRA storage facility, the Omaha Shops are the subject of an Order under Section 3008(h) of RCRA. The Order, dated March 1, 2000, includes the following facility-wide objectives:

- Evaluate the need for interim measures (IMs) at the Omaha Shops to address contamination to relieve threats to human health or the environment.
- Perform IMs that are necessary to control contamination at the Omaha Shops or to relieve threats to human health or the environment, or to prevent or minimize the spread of contaminants while long-term corrective measures are being implemented
- Perform RCRA Facility Investigation(s) (RFI) to determine the nature and extent of any release of hazardous waste or hazardous constituents at or from the Omaha Shops

- Perform a corrective measures study(ies) (CMS) to identify and evaluate alternatives for the corrective measures necessary to prevent, mitigate, or remediate any releases of hazardous wastes or hazardous constituents at or from the Omaha Shops.
- Implement necessary corrective measure(s) at the Omaha Shops.
- Perform any other activities necessary to correct or evaluate actual or potential threats to human health and/or the environment resulting from the release or potential release of hazardous waste or hazardous constituents at or from the former Omaha Shops facility.

1.3.2 Operable Units

The Omaha Shops have been divided into three operable units (OUs) to ease the administration of the site and to accelerate corrective measures in certain areas. The operable units are shown in Figure 1-2 and include the following:

- Operable Unit No. 1 (OU1) - includes the surface soils above the normal high water table within the portion of the Omaha Shops that was acquired by the City of Omaha for the development of a public-use building project. OU1 comprises approximately 100 acres south of Cuming Street and consists of:
 - The Qwest Center (approximately 12 acres)
 - Saddle Creek Records (approximately 1 acre)
 - Hilton Hotel adjacent to Qwest Center (approximately 1 acre)
 - Balance of OU1 – parking lots, streets, and open space (approximately 86 acres)
- Operable Unit No. 2 (OU2) - includes surface soil above the normal high water table within the portion of the Omaha Shops not included in OU1. OU2 comprises approximately 110 acres north of Cuming Street and consist of:

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Operable Unit No. 2 Corrective Measures Implementation Work Plan

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Omaha Shops
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- Lot 10 – previously owned by UPRR but recently redeveloped into hotels by others (3 acres)
- Lot 11 - Undeveloped open space, owned by UPRR (25 acres)
- Operating Rail Yard Property, owned by UPRR (82 acres)

OU2 comprises approximately 110 acres and includes seven Solid Waste Management Units (SWMUs) and six Areas of Concern (AOCs):

- SWMU 14 – Paint Barrel Pits
- SWMU15 – Old Transformer Storage Area
- SWMU 16 – Steel Car Shop
- SWMU17 – Tin and Plating Shop
- SWMU 18 – North and South Open Drum Area
- SWMU 20 – North and South Acetylene Sludge Pits
- SWMU 21 – Chemical Spill Area
- AOC 10 – Eight Street Yard
- AOC 11 – Car Holding Area
- AOC 12 – Car Demolishing Area
- AOC 13 – Grace Street Tank and Pump House
- AOC 14 – Grace Street Yard
- AOC 16 – Oil Pipeline

Operable Unit No. 3 (OU3) – includes the groundwater underlying the Omaha Shops (OU1 and OU2), at the normal high water table and below.

The Omaha Shops property has been the target of several development proposals since 1987. These development proposals have included public recreational facilities, mixed-use commercial/residential developments, and heavy industrial facilities. Dividing the Omaha Shops into three operable units recognized the potential for development and provided the flexibility to facilitate the City of Omaha's convention center and arena schedule requirements on OU1 (URS, 2006). The redevelopment of Omaha's riverfront area, including a potential new downtown ballpark, is expected to continue and may include properties in OU2.

1.3.3 Corrective Action at the Omaha Shops

Per the requirements of the USEPA Order, several RCRA studies were performed for the three Operable Units, including:

- OU1:
 - RCRA Facility Investigation - completed in 1999
 - Corrective Measures Study - completed in 2000
 - Corrective measures - implemented in 2000-2001
- OU2:
 - RCRA Facility Investigation - completed in 2001
 - Interim Measures (for asbestos-impacted soil, paint barrel pits, and acetylene sludge pits) - completed in 2000 through 2002
 - Corrective Measures Study - completed in 2006
 - Statement of Basis issued for OU2 and OU3 in 2007
- OU3:
 - RCRA Facility Investigation - completed in 2003
 - Corrective Measures Study - completed in 2006
 - Statement of Basis issued for OU2 and OU3 in 2007

1.4 Summary of the Corrective Measures for OU2

As presented in the Final Corrective Measures Decision document (USEPA, 2007a), the Corrective Measures for OU2 were selected to remediate soil to non-residential use standards and include the following:

- Excavation and off-site disposal of soil above cleanup levels;
- Institutional controls to restrict future development to non-residential uses; and
- Long-term monitoring of the effectiveness of the institutional controls.

USEPA also proposed that these same corrective measures could be used for residential redevelopment but with new cleanup levels that are protective of residential exposure scenarios in addition to corrective measures proposed for groundwater for OU3.

1.5 Report Organization

This document has been prepared to meet the USEPA requirements of the Final Corrective Measures Decision Document (USEPA, 2007a). This Work Plan contains nine sections, including:

- **Section 1, Introduction** – Discusses the background, objectives and organization of the CMI Work Plan.
- **Section 2, How to Use this Work Plan** - Presents a flow chart that facilitates implementation of the actions needed to implement Corrective Measures at OU2.
- **Section 3, Soil Cleanup Levels** – Presents the cleanup levels for constituents of concern in soil for both non-residential and restricted residential property development scenarios.
- **Section 4, Screening and Pre-Development Investigations** – Presents the soil sampling requirements that precede redevelopment activities.

- **Section 5, Plan for Excavation and Offsite Disposal of Impacted Soil –** Summarizes the requirement to remove impacted soil from non-residential and restricted residential developments.
- **Section 6, Soil Management and Disposal –** Provides details of the requirements for off-site transport and disposal of impacted soil.
- **Section 7, Institutional Controls at OU2 –** discusses steps that will be performed to implement restrictive covenants and other institutional control at OU2.
- **Section 8, Long-term Monitoring of Corrective Measures –** discusses the inspection and reporting requirements of the corrective measures.
- **Section 9, References –** Contains the literature references that were used to develop this work plan.

2. How to Use this CMI Work Plan

The USEPA has determined that no additional soil removal actions in OU2 are needed as long as the property continues to be used by UPRR as an industrial railroad yard (USEPA, 2007a). However, future redevelopment of properties within OU2 will require this CMI Work Plan to be implemented by UPRR or other third parties who purchase and redevelop the property. Therefore, this CMI Work Plan may be used by both UPRR and/or other third party entities who purchase property within OU2. This CMI Work Plan is intended to describe and guide additional site investigation and additional corrective measures at OU2 that are triggered by future property redevelopment as outlined by the USEPA in the Final Corrective Measures Decision (USEPA, 2007a).

The entity responsible for redevelopment of the property can use the flow chart in Figure 2-1 to determine the necessary steps and decision points to implement the USEPA required Corrective Measures at OU2. It is important to note that different soil cleanup levels will apply to individual parcels of property depending on the proposed use of the redeveloped property. Properties must be designated as either non-residential or restricted residential.

3. Soil Cleanup Levels

This section discusses the soil cleanup levels that will be used to guide soil excavation and disposal (i.e., remediation) activities at OU2 that would occur prior to redevelopment and building construction. Two lists of soil cleanup levels are presented for two different development scenarios:

1. Non-residential development – exposure scenario includes construction workers, on-site workers, and recreational users.
2. Restricted residential development – Mezzanine (second story or above) residential use only. No residential use is allowed on the ground or basement levels.

The lists of soil cleanup levels focus on specific Constituents of Concern (COCs) identified at the site and evaluated during the OU2 Risk Assessment (contained in the OU2 RFI Report, URS, 2001). An organic chemical was included in the risk assessment if it was detected in more than five percent of the samples collected during the RCRA Facility Investigation. An inorganic constituent was evaluated in the Risk Assessment only if it was detected above natural occurring levels.

3.1 Non-Residential Soil Cleanup Levels

Using information from the Risk Assessment, soil cleanup levels were established for COCs for the above non-residential exposure scenarios. The non-residential soil cleanup levels are concentrations of COCs in soil that are protective of human health during construction and redevelopment activities at OU2, and later occupancy by on-site workers. The non-residential soil cleanup levels are presented in Table 3-1.

3.2 Restricted Residential Soil Cleanup Levels

The cleanup levels obtained from the risk assessment were developed for non-residential uses of the Site and thus, are not considered to be protective of residential developments. The USEPA proposed cleanup levels that would be protective of human health and the environment in the event that restricted residential development did occur. The establishment of the restricted residential cleanup levels and contingent corrective measures provides for the widest range of redevelopment of the site by allowing prospective redevelopers to make informed redevelopment decisions, and

could minimize delays caused by USEPA's process for modifying approved corrective measures and cleanup levels (USEPA, 2007a).

Restricted residential soil cleanup Levels for the COCs at the Site are presented in Table 3-2. These residential cleanup numbers were developed from the USEPA Region 6 Human Health Medium-specific Screening Levels, using the Residential Soil Exposure Scenario (USEPA, 2007b).

3.3 Distribution of COCs within OU2

Surface and subsurface soil samples were collected throughout OU2 as part of the RFI conducted at the Omaha Shops. Table 3-3 compares the maximum concentrations detected in the RFI sampling to the restricted residential soil cleanup levels, and shows which COCs not detected above their associated cleanup levels at the Site were detected above the lower restricted residential soil cleanup levels at OU2.

Appendix A contains summary figures from the RFI Report showing detections of chemical constituents at OU2. The RFI figures show that the most widely distributed COC detected above cleanup goals is lead. The figures in Appendix A show that the remaining organic COCs detected above cleanup goals presented in Table 3-3 are generally isolated around specific former SWMUs (e.g., such as semi-volatile organic compounds and PCBs in the vicinity of the acetylene sludge pits).

3.4 Constituents and Analytical Methods

The laboratory methods required to analyze the soil COCs are included in Tables 3-1 and 3-2 and fall into six general classes of analysis, each requiring different analytical methods, including:

- Pesticides – USEPA Method 8081A
- PCBs – USEPA Method 8082
- Volatile Organics – USEPA Method 8260B
- Semi-volatile Organics – USEPA Method 8270C

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- Metals – USEPA Method 6010B
- Mercury – USEPA Method 7471A

The Quality Assurance Project Plan (QAPP) in Appendix B contains additional information regarding analytical methods, container requirements, and holding times for these groups of constituents.

3.5 "Impacted Soil" and "Clean Soil"

For the purposes of clarity, the term 'impacted soil' will refer to soil, at any depth, which contains levels of any COC above its corresponding soil cleanup level for the appropriate occupation scenario (i.e., non-residential or restricted residential) proposed for property redevelopment.

'Clean fill' or 'clean soil' is defined as soil that has COC concentrations below the unrestricted use levels (Table 3-2), except that the clean soil lead level shall be 200 mg/kg or less (USEPA, 2007a).

4. Screening and Pre-Development Investigations

Screening and Pre-Development Investigations should be conducted during the redevelopment planning and design stage and should be completed before intrusive construction activities begin at a proposed redevelopment site. The purpose of the Screening and Pre-Development Investigations are to characterize the soil in the area of proposed redevelopment (beyond that which was performed during the OU2 RFI) and to determine whether excavation of soil with COCs above cleanup levels is warranted based upon the appropriate soil cleanup levels. Additional confirmation sampling will likely be required after excavation and prior to backfilling with clean fill to verify that any remaining COCs in soil are below soil cleanup levels.

The results of the screening investigation will be used to determine the specific list of COCs for each parcel being redeveloped and will focus on the list of analytes that must be carried forward in the pre-development and confirmation sampling programs. The predevelopment investigation will characterize the extent and volume of impacted soil that must be addressed during the excavation activities.

4.1 Determine the Appropriate Development Occupancy Scenario

The Corrective Measures for OU2 allow for non-residential development and also for restricted residential development. Each occupancy scenario has different cleanup soil levels and the residential development scenario has additional groundwater corrective measures and monitoring requirements. Therefore it is crucial to make the appropriate determination regarding the potential future use of any redevelopment project contemplated for OU2 prior to any soil excavation activities.

The proposed corrective measures and cleanup levels for the restricted residential scenario are based upon the assumption that any residential development will consist of mezzanine (second story or above) residential development (USEPA, 2007a). Additionally, restricted residential use will not allow the extraction or other use of groundwater from OU3.

4.2 Determine the Required Screening COCs

At a minimum, all screening samples will be analyzed for lead. Additional groups of COCs will be included in the screening analysis if the property boundaries of the proposed development contain detectable levels of a COC, as determined by

reviewing the RFI figures contained in Appendix A. All COCs within the group containing the detected constituent must be analyzed during screening. For example, if a single volatile organic chemical (VOC) is detected within the property boundary of the proposed development, then all VOC COCs must be analyzed during screening. The constituent grouping of COCs consists of:

- Pesticides
- PCBs
- Volatile Organics
- Semi-volatile Organics
- Metals (including Mercury)

If no COCs were detected within the property boundaries of the proposed development, then only lead must be analyzed for during the screening sampling.

4.3 Collect Screening Soil Samples

During the initial phases of development planning, soil samples must be collected from the parcel of land proposed for redevelopment from the land surface to the anticipated depth of at least one foot below the depth to which workers will be exposed during construction. The purpose of this screening sampling is to determine the type of COCs in the soil that will be encountered during construction, provide baseline data to determine the necessity for special considerations for worker exposure and soil disposal, and to focus the list of constituents that must be sampled during the more comprehensive Pre-Development Investigation.

The minimum number of Screening Soil sampling locations and depths will be determined using the following criteria:

1. Locations:
 - At least two (2) locations will be sampled for each development project.
 - Sample locations will be distributed throughout the proposed development property footprint to gather representative data.

2. Depths:

- Surface soil - a sample will be collected at the 1 ft below ground surface (bgs) interval at each sampling location.
- Subsurface soil – at each sampling location, subsurface soil samples will be collected:
 - at a depth 1 ft below the anticipated depth of any excavation necessary for building foundations and utilities (the bottom sample).
 - mid-way between the surface sample and the bottom sample.

3. COCs to be analyzed:

- Lead
- Any additional constituent groups as determined from an examination of the summary figures in Appendix A (i.e., VOCs, SVOCs, PCBs, metals).

Additional soil sample locations and depths may be warranted to provide a reasonable expectation that the presence of any COCs would be detected with the proposed sample density.

Samples will be collected in accordance with the methods contained in the Sampling and Analysis Plan (SAP), included as Appendix B. The laboratory analysis will be performed in accordance with the provisions and requirements described in the QAPP, included in Appendix C.

4.4 Prepare Screening Sampling Summary and Determine Pre-Development Sampling Scope

If a COC or COCs are detected above its associated cleanup level, then the soil within the development footprint is considered to be impacted and soil excavation and off-site disposal will be required for at least a portion of the soil within the boundaries of proposed development. Pre-development soil samples will be collected to refine the understanding of the extent of the on-site impacted soil, as discussed in the following sections. Any COC detected above its associated cleanup level will be included in the list of constituents to be analyzed in the pre-development sampling. Lead will also be

included in the pre-development sampling analyte list, regardless of its detection in the screening sampling.

The results of the screening sampling will be summarized in a letter to UPRR and USEPA, presenting tables of the analyses performed and maps showing the screening sample locations. The letter will also include the proposed scope of work for pre-development sampling, and will include:

- The list of COCs to be analyzed in the pre-development sampling (including, at a minimum, lead)
- A figure showing the proposed sampling locations (based on the guidelines presented in the following section)
- Schedule for performing the Pre-Development Investigation.

4.5 Collect Pre-Development Soil Samples

Pre-development sampling will be performed to refine the horizontal and vertical extent of the impacted soil within the footprint of the proposed development in order to determine the volume of impacted soil that must be removed, if necessary.

The minimum number of sampling locations and depths for pre-development sampling will be determined using the following criteria:

1. Locations:

- At least six (6) locations will be sampled for each development project.
- At least one sample will be collected for every 10,000 square feet (100 ft by 100 ft) of development property area (subject to the eight sample minimum).
- Sample locations will be distributed throughout the proposed development property footprint to gather representative data.

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2. Depths:

- Surface soil - a sample will be collected at the 1 ft below ground surface (bgs) interval at each sampling location
- Subsurface soil – at each sampling location, subsurface soil samples will be collected:
 - at a depth 1 ft below the anticipated depth of any excavation necessary for building foundations and utilities (the bottom sample)
 - mid-way between the surface sample and the bottom sample

3. COCs to be analyzed – only those individual COCs that were detected at or above their associated soil cleanup levels will be analyzed.

Additional soil sample locations and depths may be warranted to provide a reasonable expectation that the presence of any target COCs would be detected with the proposed sample density.

Samples will be collected in accordance with the methods contained in the SAP, included as Appendix B. The laboratory analysis will be performed in accordance with the provisions and requirements described in the QAPP, included in Appendix C.

4.6 Compare the Results of the Pre-Development Samples to the Appropriate Soil Cleanup Levels

If the results of the screening sampling and the Pre-Development sampling indicate that all analyzed COCs are below the appropriate corresponding soil cleanup levels, then construction activities can proceed without implementing the additional excavation and off-site disposal corrective measures. All other corrective measures discussed in this CMI Work Plan, including the implementation of Institutional Controls, and long-term monitoring, maintenance, inspection, and reporting requirements are still required and must be implemented.

If any COCs are detected at or above the appropriate corresponding soil cleanup levels, then USEPA-required corrective measures, which includes excavation and off-site disposal, must be implemented, and the procedures detailed in the subsequent sections of this Work Plan will be followed.

4.7 Submit Results of Pre-Development Sampling Report

The results of both the Screening and Pre-Development sampling will be tabulated and compared to the appropriate cleanup levels (Table 3-1 for non-residential development and Table 3-2 for restricted residential development). A brief letter report will be transmitted to UPRR and USEPA representatives, describing the results of the sampling programs. The letter report will contain:

- A figure showing the soil sampling locations, and proposed development footprint;
- A table of the screening sampling and pre-development sampling (if collected) results;
- Recommendations for additional pre-development sampling (if any);
- A plan including a figure discussing the location and volume of soil requiring excavation and off-site disposal (if any); and
- If soil excavation is required, a plan for excavation confirmation sampling to confirm all impacted soil was removed prior to backfilling.

5. Plan for Excavation and Offsite Disposal of Impacted Soil

As mentioned in Section 4, if the results of the pre-development sampling indicate that all soil COCs are below the appropriate soil cleanup levels, then construction activities can proceed without additional excavation. If any COCs are detected above the appropriate corresponding soil cleanup levels, then USEPA-required corrective measures in the form of soil excavation and off-site disposal must be implemented. This section presents the requirements for implementing the corrective measures to excavate the impacted soil prior to redevelopment construction activities. Since the requirements differ for non-residential and restricted residential development, they will be discussed separately in the following sections.

5.1 Health and Safety Plan Requirements

A project-specific health and safety plan (HASP) must be prepared prior to the start of any intrusive work. The HASP must be prepared and implemented, and all work on this project will be carried out in compliance with the Occupational Safety and Health Administration's (OSHA) Hazardous Waste Operations and Emergency Response regulation 29 CFR 1910.120. All personnel working on hazardous operations or in the area of hazardous operations shall read and be familiar with the project-specific HASP before doing any work. The HASP shall be submitted to UPRR and USEPA for review.

5.2 Refinement of Areas Requiring Corrective Action

The screening and pre-development soil investigations result in an understanding of the extent of impacted soil within the boundaries of the proposed development. The developer may choose to collect additional data to refine the estimate of impacted soil, in an attempt to minimize the volume of soil requiring off-site disposal.

5.3 Non-Residential Excavation Requirements

The soil cleanup levels for non-residential use (Table 3-1) will be used to determine impacted soils for properties that have been determined to be redeveloped for non-residential uses.

For those areas in which soil containing COCs above the non-residential cleanup levels are encountered, the following excavation and disposal activities shall be implemented:

- **Areas where the final grade will be the same as the original grade –** Impacted surface soil (soil from the ground surface to a minimum depth of one foot below the original elevation) will be removed, stockpiled and the resultant excavation backfilled with clean soil to the final development grade.
- **Areas where the final grade will be below the original grade –** Impacted soil will be removed to a depth of at least one foot below the final development elevation and the resultant excavation backfilled with clean soil to the final development elevation.

All impacted soil generated from excavation activities will be appropriately stockpiled, profiled for acceptance at an off-site landfill, and transported to the landfill with the appropriate documentation. On-site burial or placement of excavated impacted soil is not allowed under the Final Corrective Measures Decision Document (USEPA, 2007a). Section 6 of this CMI Work Plan presents details of the soil disposal and transportation requirements.

5.4 Restricted Residential Excavation Requirements

The soil cleanup levels for restricted residential use (Table 3-2) will be used to determine impacted soils for properties that have been determined to be redeveloped for residential use.

For those areas in which soil containing COCs above the restricted residential cleanup levels are encountered, two excavation and disposal options are available:

- Option 1 – use where non-lead constituents are present in the impacted soil
- Option 2 – use where lead is the primary constituent in impacted soil

5.4.1 Restricted Residential Option 1 – Removal of all Impacted Soil

Option 1 consists of the following activities to implement the corrective measure for impacted soil:

- All "impacted soil" within the footprint of a proposed development boundary shall be excavated and disposed off-site at an approved landfill.

- Excavation will continue within the excavation footprint until non-impacted soil (soil with all COCs below their respective restricted residential cleanup goal on Table 3-2) or groundwater is reached.
- The resultant excavation shall be backfilled with clean fill to the final developed grade or elevation.

All impacted soil generated from excavation activities will be stockpiled, profiled for acceptance at an off-site landfill, and transported to the landfill with the appropriate documentation. The waste handling procedures detailed in Section 6 will be followed when determining the proper landfill disposal location.

5.4.2 Restricted Residential Option 2 – Alternative Lead Excavation

Option 2 can be used as an alternative to Option 1 when the extent of "impacted soil" is driven primarily by lead impacts. The alternative lead corrective measure consists of:

- All soil within the proposed development boundary with **non-lead** COCs (i.e., volatile organics, semi-volatile organics, pesticides and PCBs) above the restricted residential cleanup levels shall be excavated and disposed off-site at an approved landfill.
- Excavation will continue within the excavation footprint until the lead concentration (measured at the exposed surface of the excavation) is:
 - Less than 400 mg/kg in the initial foot from the original surface, or
 - Less than 1,200 mg/kg at depths greater than one foot from the original surface or until groundwater is encountered.
 - The excavation will terminate at less than 12 inches if the residual soil lead concentration is less than 400 mg/kg within the initial foot of the excavation.
- Excavate lead contaminated soil in areas identified as green space soil (i.e., non-paved areas of the property that do not contain gardens or other landscaping) so that lead levels are below 400 mg/kg for soil from the ground surface to a depth of one foot if covered by turf grass. If deeper plantings are installed, the planting will be over excavated to a depth of 1 foot below the depth of the deepest root ball or a maximum of 3 feet below grade if the soil

lead concentration exceeds 400 mg/kg. Clean fill will be used to replace excavated soil.

- If the final development elevation will be below the original ground elevation at the time of the RFI, soil will be removed to a minimum of one foot below the final development elevation and backfilled with clean soil. Alternatively, soil with lead concentrations greater than 400 mg/kg in the first one foot of depth from the ground surface may be covered ("capped") with a minimum one foot of clean fill.
- Parking lots, sidewalks or buildings may cover soil with lead concentrations less than 1200 mg/kg. If soil contains greater than 1200 mg/kg lead, it shall be covered with a minimum of one foot of clean fill prior to construction of buildings and appurtenances, parking lots or sidewalks.
- Soil that may or will be disturbed by construction with soil lead concentrations higher than 1200 mg/kg shall be removed to a depth of one foot below the depth of excavation necessary for building foundations, utilities, etc., and construction workers in the area must be informed of the risks and safety precautions that must be used. These excavations shall be backfilled with clean fill as construction is completed.
- If the impacted soil is located in an area where a garden is proposed as part of the redevelopment, then the following criteria will guide the extent of excavation. Excavation will continue until the lead concentration (measured at the exposed surface of the excavation) is:
 - Less than 400 mg/kg in the initial **two feet** from the original surface, or
 - Less than 1,200 mg/kg at depths greater than **two feet** from the original surface.
- Confirmation sampling will be performed along the base of the excavation and from the excavation walls to confirm those cleanup goals have been achieved. See Section 5.6 for a description of the excavation confirmation sampling program.
- The resultant excavation shall be backfilled with clean fill to the final developed grade or elevation.

- The lead-impacted soil must not be used as backfill material but must be disposed off-site. All excavations will be backfilled with clean soil as construction is completed. "Clean soil" is soil with constituent concentrations suitable for unrestricted use, except that lead levels shall be 200 mg/kg or less.
- Excavated soil shall be disposed as solid or hazardous waste. Soil is a hazardous waste if it contains constituents that exceed Toxicity Characteristics Leaching Procedure (TCLP) action levels (refer to Section 6 for additional waste disposal discussion).

All impacted soil generated from excavation activities will be stockpiled, profiled for acceptance at an off-site landfill, and transported to the landfill with the appropriate documentation. The waste handling procedures detailed in Section 6 will be followed when determining the proper soil disposal location.

If the final development elevation will be below the original ground elevation, then the elevations described above will be based upon the proposed final restricted residential ground surface elevation.

5.5 Soil Excavation Procedures

Excavation of impacted soil will be performed in a manner that prevents direct exposure between site workers and impacted soils. Typical equipment for these activities includes backhoes, excavators, cranes, vacuum trucks, trench boxes, and front-end loaders. Trench boxes can be used to minimize the volume of excavated soil required to be removed, provide wall stability during the excavation, maximize vertical accessibility for the excavating equipment, and clearly define the lateral limits of the excavations. The trench boxes will be advanced and stacked until the total desired depth is reached and will be retrieved as the excavation is backfilled.

Groundwater encountered, such as infiltrates from excavations, rainfall runoff, or ponded water, and accumulated in the excavation will be pumped into temporary storage vessels until results of analyses indicate the most appropriate method for treatment and/or disposal.

Storm water controls, including temporary berms, will be utilized in the event of precipitation during excavation activities, although individual excavations that are relatively small can be scheduled to avoid periods of precipitation.

The project-specific HASP will address the appropriate personal protective equipment (PPE) and allowable concentrations of organic vapors and dust in the breathing space during excavation. On-site air monitoring and dust, vapor, and odor control provisions will be necessary during excavation operations. Excavation activities can result in the release of fugitive dusts and runoff from disturbed soil. Dust controls could include water sprays or application of chemical dust suppressants. Soil erosion and sediment controls will also be implemented prior to excavation.

If necessary, staging areas for excavated impacted soil will be constructed using graded contours to reduce ponding of precipitation, liners to prevent groundwater contamination, and berms to prevent runoff. Should the staging areas be used, confirmation samples will be collected from the storage areas after removal of impacted soil. The off-site transportation of wastes resulting from excavation will meet federal and state shipping and manifesting regulations as discussed in Section 6.

Backfilling, grading, and site restoration after excavation will be completed in such a way as to prevent creation of large open areas that could collect and retain runoff. The excavated areas will be backfilled and compacted with clean soil. After backfilling, the excavation will be brought flush to the final grade required for the redevelopment project. If the final development grade is to be the new ground surface, then the area will be re-vegetated in a manner that is consistent with the surrounding area. At a minimum, backfilled areas will be compacted to minimize the potential for future settlement using three to five passes with track-mounted equipment. Additional compaction may be required to meet the needs of the development project.

Staging of excavated soil will be minimized, and roll-offs will be used as needed to contain soil deemed unsuitable for staging on the ground surface. Any impacted soil that is stored prior to off-site transport will be covered.

Soil that is excavated will be pre-characterized for disposal as either hazardous or non-hazardous. Non-hazardous soil will be transported to Butler County Landfill near David City, Nebraska, and hazardous soil will be transported to the Lone Mountain Landfill near Waynoka, Oklahoma or other UPRR approved facility. The trucks used to transport soil from the site will be equipped with plastic liners and will be covered in transit. Additional details regarding the transport and disposal of the excavated soil are presented in Section 6.

5.6 Excavation Confirmation Sampling Prior to Backfilling

Once the limits of excavation required for the development have been achieved, confirmation sampling is required prior to backfilling or construction. The purpose of the confirmation sampling is to document residual soil remaining after excavation activities and to confirm that the extent of impacted soil has been removed.

The required analysis and minimum number of sampling locations will be determined using the following criteria:

- **Constituents to be analyzed** - Only those COCs from the soil cleanup level tables that were detected above the appropriate cleanup level (non-residential or restricted residential) during the pre-development sampling are required to be analyzed during excavation confirmation sampling. For example, if lead was the only constituent among the COC list that was detected prior to excavation, then only lead will be analyzed during excavation confirmation sampling.
- **Required Excavation Confirmation Sampling Locations** - At least five (5) locations will be sampled for each area excavated (a minimum of one sample from each of the four sidewalls and a minimum of one sample from the bottom of the excavation)
 - For the sidewalls, at least one sample will be collected for every 100 lineal feet of sidewall. The sidewall samples will be collected at or near the bottom of the sidewall
 - For the excavation bottom, a sample will be collected for every 10,000 square feet (100 ft by 100 ft) of excavation footprint.
- **Sample depth** – all confirmation samples will be collected at the face of the sidewall or excavation bottom (generally within the first 6-inches of the excavation face).
- Sample locations will be distributed throughout extent of the excavation footprint to gather representative data.

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Additional soil sample locations and depths may be warranted to provide a reasonable expectation that the presence of any COCs would be detected with the proposed sample density.

Samples will be collected in accordance with the methods contained in the SAP, included as Appendix B. The laboratory analysis will be performed in accordance with the provisions and requirements described in the QAPP, included in Appendix C.

The results of the confirmation sampling will be summarized in a letter report to UPRR and USEPA, containing a description of the sampling program, summary tables of the confirmation sampling results, and figures showing the excavation footprint(s) and sampling locations and results.

6. Soil Management and Disposal

6.1 Objective

Interim Measures at OU2 have removed contaminated soil to stabilize the area so that, in its current state, no immediate action is needed to remove additional volumes of impacted soil. However, during potential redevelopment and construction of structures on OU2, soil containing constituents that exceed non-residential or restricted residential soil cleanup levels and/or levels which for which special handling, transportation, and disposal requirements are required may be encountered.

The following sections present a set of procedures for the management and disposal of waste soils generated during redevelopment activities at OU2.

6.2 Clean, Non-Hazardous, and Hazardous Soil

All soil to be excavated or managed as part of redevelopment or construction project at OU2 can be classified based on the results of the pre-development soil sampling, including:

- Clean soil
- Non-hazardous soil
- Hazardous soil

The following sections will describe the criteria that will determine soil classification.

6.2.1 Clean Soil

Clean soil is defined as soil which contains COCs below the restricted residential use cleanup goals (Table 3-2), except that lead levels shall be 200 mg/kg or less.

Clean soil can be used at other locations within the boundaries of the property being redeveloped. If excess clean soil cannot be used within the boundaries of the development project, the soil must be disposed as non-hazardous solid waste at the Butler County Landfill in David City, Nebraska or other UPRR approved facility. The

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landfill may require analytical testing of the soil to document that chemical concentrations do not exceed their waste acceptance criteria.

6.2.2 Non-Hazardous Soil

Excavated soil with detectable levels of COCs that are above non-residential or restricted residential soil cleanup levels (Tables 3-1 and 3-2) but are below applicable Federal and Nebraska hazardous waste standards are classified as non-hazardous materials.

All non-hazardous soil that is removed from its original location must be disposed off site as a special waste at the Butler County Landfill in David City, Nebraska. The landfill may require analytical testing of the soil to document that chemical concentrations do not exceed their waste acceptance criteria.

6.2.3 Hazardous Soil

Soil will be considered hazardous if it contains COC concentrations above TCLP Action Levels. OU2 Constituents of Concern for which TCLP values are established are summarized in the following table:

OU2 Constituent of Concern	TCLP Level (mg/L)
Benzene	0.5
Tetrachloroethene	0.7
Trichloroethene	0.5
Vinyl Chloride	0.2
Chlordane	0.03
Arsenic	5
Cadmium	1
Chromium	5
Lead	5
Mercury	0.2
Selenium	1
Silver	5

mg/L - Milligrams per liter.

All hazardous soil that is removed from its original location must be disposed off site as a hazardous waste at the Lone Mountain Landfill in Waynoka, Oklahoma or other UPRR approved facility.

6.3 Construction Activities

After completion of interim measures at OU2, levels of known soil contamination should be at concentrations that do not pose a risk to site workers, including construction or landscape maintenance workers. Therefore, Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) training will generally not be required of construction workers whose activities disturb the soil. However, HAZWOPER training may be required if there is also potential for contact with COC-impacted groundwater.

If a sufficient number or type of pre-excavation soil samples was not collected to comply with landfill acceptance criteria or to document that the soil is clean, additional soil sampling will be required. Such samples can be collected from the soil as it is being excavated or from the soil stockpiles/bins. Excavated soil shall be managed in a way that will not cause sediment in storm water runoff. Excavated soil that is suspected or known to be contaminated shall be placed in covered rollofs or other sealed containers, or stockpiled and covered with plastic sheeting held in place.

Although future development and construction sites should be adequately characterized prior to construction, COC-impacted soil could be unexpectedly encountered during excavation. The Site Project Manager or development group representative is required to notify UPRR and the USEPA immediately when suspected new contamination is discovered.

6.4 Approved Landfill Facilities

The table below identifies the Treatment/Disposal Facilities identified for disposing of the various soil wastes to be shipped off-site. Any new disposal facilities identified by the Developer for use should be submitted to UPRR for evaluation and approval.

Soil Waste Classification	Treatment/Disposal Facility
Clean Soil (that can not be used onsite)	Butler County Landfill, Inc. 3588 R Road David City, Nebraska 68632 402.367.4664
Non-hazardous Soil (special waste)	Butler County Landfill, Inc. 3588 R Road David City, Nebraska 68632 402.367.4664
Hazardous Waste Soil	Clean Harbors Lone Mountain Route 2, Box 170 Waynoka, Oklahoma 73860-9622 580.697.3500

6.5 Requirements for Off-Site Transport

To ensure the safe and proper delivery of waste loads to the designated disposal facility, the transport vehicles must be properly prepared and loaded. It will be the responsibility of the party conducting corrective measures to see that all vehicles are suitable for use and are properly loaded and prepared for shipment.

6.5.1 Lining and Tarping

For soil loaded directly into dump end trailer/box or roll-off containers for off-site transit, the vehicle will be lined with a minimum 6 mil polyethylene liner in the box. The driver is responsible for installing the liner. The liner assists in removal of the waste, inhibits migration of any trapped moisture during transit, and keeps the trailer/roll-off box from becoming contaminated. After loading, the excess liner from the box sidewalls is placed over the waste, forming an envelope to seal the material in the box. A visual inspection will be performed to ensure that no contaminated material has spilled onto the sides of the transport vehicle. The dump body trailer or roll-off will then be fitted with a tarp to cover the entire load preventing water intrusion from rain or dusting from the contaminated waste during transit.

6.5.2 Labeling/Marking /Placarding

Prior to transporting a hazardous waste off-site, each container (package) must be labeled as per 49 CFR Part 172, Subpart E. The transport vehicle must be properly placarded as per 49 CFR Part 172, Subpart F. All RCRA and/or Department of Transportation (DOT) regulated materials shipped off-site for disposal will be transported in properly labeled, marked, placarded and permitted vehicles.

6.5.3 Manifesting of Shipments

Special wastes and hazardous wastes shipped off-site for disposal must be documented by a Hazardous Waste Manifest as per USEPA regulations in 40 CFR, Section 262. DOT requires that a copy of the manifest must accompany each shipment of waste from point of origin to the final destination (TSDF). For non-hazardous wastes, a bill of lading or shipping paper is necessary, as per DOT regulations in 49 CFR, Sections 171 and 172.

6.5.4 Preparation of Shipping Papers

The party responsible for corrective measures (UPRR or Developer) has the responsibility for proper preparation of the shipment documentation. A hazardous or waste manifest will accompany all hazardous waste shipments and a bill of lading or shipping papers will accompany all non-hazardous waste shipments.

6.5.5 Transporter Requirements

A transporter/carrier may not transport a hazardous material unless it is accompanied by a properly prepared manifest. In addition, the transporter/carrier must ensure that the manifest or shipping paper is readily available and recognizable by the authorities in the case of an accident or inspection. Finally, the transporter/carrier must give the manifest to a person representing the designated disposal facility receiving the waste.

When waste shipments are ready to exit the Site, the truck driver will be presented with the completed paperwork as required by regulation. He/she will sign the manifest(s) or bill of lading as required, and carry the manifest(s) or bill of lading in the cab of the transport vehicle at all times until the shipment arrives at the designated disposal facility.

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6.5.6 Sample Manifests Manifesting of Shipments

An example of EPA's Uniform Hazardous Waste manifest is included in Appendix D.

7. Institutional Controls at OU2

The primary mechanism for implementing institutional controls to maintain the integrity of the corrective measures at the Site is through the use of a restrictive covenant, placed in the deed file with the Douglas County Register of Deeds. A model Notice of Environmental Remediation Activity and Environmental Covenant Restriction Use document is attached as Appendix E. The restrictive covenant must be consistent with the requirements of the Nebraska Uniform Environmental Covenants Act (Legislative Bill 298, dated March 2005).

At the time of sale of any parcel of land within the boundaries of OU2, a similar restrictive covenant will accompany the real estate sales documents, and will be executed by buyer and UPRR as the seller. Subsequent transfers of ownership of the property must be accompanied by the restrictive covenant, so that the integrity of the corrective measures at the Site is maintained.

The provisions of any restrictive covenant placed on property within the boundaries of OU2 must contain the following specific requirements:

- The property shall not be used for non-residential uses unless the corrective measures are fully implemented and residual soil concentration meet the non-residential use cleanup levels contained in Table 3-1;
- The property shall not be used, developed, or operated in any manner that will impair, degrade, or compromise the corrective measures;
- The property shall not be used for developed for any day care, pre-school, playground, playground, athletic field, picnic ground, dormitory, or nursing home; and
- The property shall not be used to treat, store, or dispose of hazardous wastes as defined by RCRA.

7.1 Restrictions on Post-development Activities

The restrictive covenant will contain requirements pertaining to activities that may occur following redevelopment of the property, including:

- **Groundwater Use Limitations** – The property owner shall not use nor allow others to use the groundwater underlying the property for human consumption or the irrigation of gardens or other domestic use, or install or cause to be installed new wells for human consumption or domestic purposes. This groundwater use restriction shall not limit the use of existing monitoring well on the property (if any) or installation of new wells on the property to monitor groundwater quality;
- **Surface Water Body Limitations** – The property owner shall not create or allow others to create water features such as ponds, lakes, streams, or other water features that have the potential to be affected by groundwater. These surface water body limitations shall not include the use of stormwater conveyance ditches or stormwater retention basins that are constructed above the typical water table elevation for that portion of OU2.
- **Soil Cover** – The property owner shall maintain a soil cover over the previously excavated impacted soil areas. Undeveloped areas within the property shall be vegetated and maintained to prevent erosion.
- **Disturbance Limitations** - In order to maintain worker safety, no person shall dig, excavate, trench, or otherwise disturb the subsurface in areas identified to contain impacted soil unless they follow the required environmental sampling and health and safety procedures outlined in this CMI Work Plan.

7.2 Other Governmental Controls

Beyond the use of restrictive covenants, UPRR will pursue additional governmental controls, including:

- Zoning restriction – through the City of Omaha Planning Board
- Well drilling restrictions – through Nebraska Department of Natural Resources
- Special building permit requirements – City of Omaha Building and Development Department

7.3 Schedule for Implementing Institutional Controls at OU2

The use of restrictive covenants have been successfully implemented by UPRR, and covenants similar to that found in Appendix E were executed for the sale of portions of the OU1 property and the sale of Lot 10 from OU2. Henceforth, all property sales from within the boundaries of OU2 will be accompanied by a restrictive covenant that will be similar to the model Notice of Environmental Remediation Activity and Environmental Covenant Restrictive Use Document provided in Appendix E.

8. Plan for Long-Term Monitoring and Maintenance of Corrective Measures

This section describes the long-term monitoring and reporting that will be performed to determine whether the Corrective Measures are sufficiently implemented and that the Institutional Controls remain in place and are providing the required protection.

The primary monitoring mechanisms for the OU2 Corrective Measures include:

- Two inspections per calendar year of redevelopment projects where excavation has occurred;
- Inspection of the OU2 properties to check for erosion, unknown construction projects, or other activities which may present an exposure pathway to impacted soil;
- Annual review of property sales from within the OU2 boundary to document that the required restrictive covenants have been transferred to new owners; and
- Annual reporting to USEPA summarizing the findings of the inspections and reviews.

8.1 Field Inspections

Field inspections will be conducted by UPRR twice per calendar year to monitor and document the integrity of the corrective measures implemented at OU2. A site inspection form (Appendix F) will be completed and transmitted to the USEPA points of contact following each inspection. Additionally, the inspection forms will be included in the annual report.

Field inspections will be performed during the spring and fall months, when the possibility of snow (which may obscure areas of the site) is low.

The UPRR Project Manager and USEPA will be notified immediately if, during the field inspection, any situation is observed which the inspector feels may pose an immediate threat to human health and the environment.

8.2 Review of OU2 Property Sales

Once per calendar year, an inquiry will be made to the Douglas County Register of Deeds to ascertain whether any sales or property transfers have been made for land parcels within the boundary of OU2. The Douglas County Register of Deeds maintains a database that provides a 12-month history of deed-type documents filed in the Register of Deeds office. This history includes sales through real estate companies, as well as by owner. This property search lists the lot, block, instrument type and number, file date, sales amount rounded to the nearest thousand dollars, and the assessor office's key number on available lots. Any sales within and in the vicinity of OU2 can be listed, and the deed record checked determine whether the applicable restrictive covenants have been transferred to the new owners.

The Register of Deeds can be reached at:

Douglas County Register of Deeds
Omaha/Douglas Civic Center
Suite H-09
1819 Farnam Street
Omaha, Nebraska 68183
402.444.7159

8.3 Reporting

An annual report will be prepared and submitted to the USEPA to document the findings of the monitoring inspections and property sales review. The report will be submitted to the USEPA by February 28 of each year for the activities completed the previous calendar year.

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Annual summary reports will be sent to the following points of contact:

Union Pacific Railroad	Mr. Jeff McDermott Union Pacific Railroad 1400 Douglas St. Mailstop 1030 Omaha, Nebraska 68179
U.S. Environmental Protection Agency	Mr. Kenneth Herstowski RCRA Corrective Action and Permits Branch Air, RCRA and Toxics Division U.S Environmental Protection Agency Region VII 901 North 5 th Street Kansas City, Kansas 66101

9. References

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- URS, 2001. RCRA Facility Investigation, Operable Unit No. 2 (OU2). Omaha Shops. URS. Omaha, Nebraska. November.
- URS, 2006. *Corrective Measures Study. Operable Unit No. 3 (OU3). Omaha Shops.* URS. Omaha Nebraska. March.
- USEPA, 2007a. *Statement of Basis – Proposed Corrective Measure for Union Pacific Railroad Operable Units 2 and 3. Proposed Restricted Residential Corrective Measures for UPRR OU1, UPRR OU2 and UPRR OU3. Union Pacific Railroad 9th and Webster Streets. Omaha, Nebraska. RCRA ID# NED00829754* U.S. Environmental Protection Agency, Region 7. Kansas City, Kansas. May..
- USEPA, 2007b. *EPA Region 6 Human Health Medium-Specific Screening Levels.* U.S. Environmental Protection Agency, Region 6. Dallas, Texas. December.

Table 2-1. Corrective Measures Implementation Flow Chart

Operable Unit No. 2
Corrective Measures
Implementation Work Plan
Union Pacific Railroad
Omaha Shops
9th and Webster Streets
Omaha, Nebraska

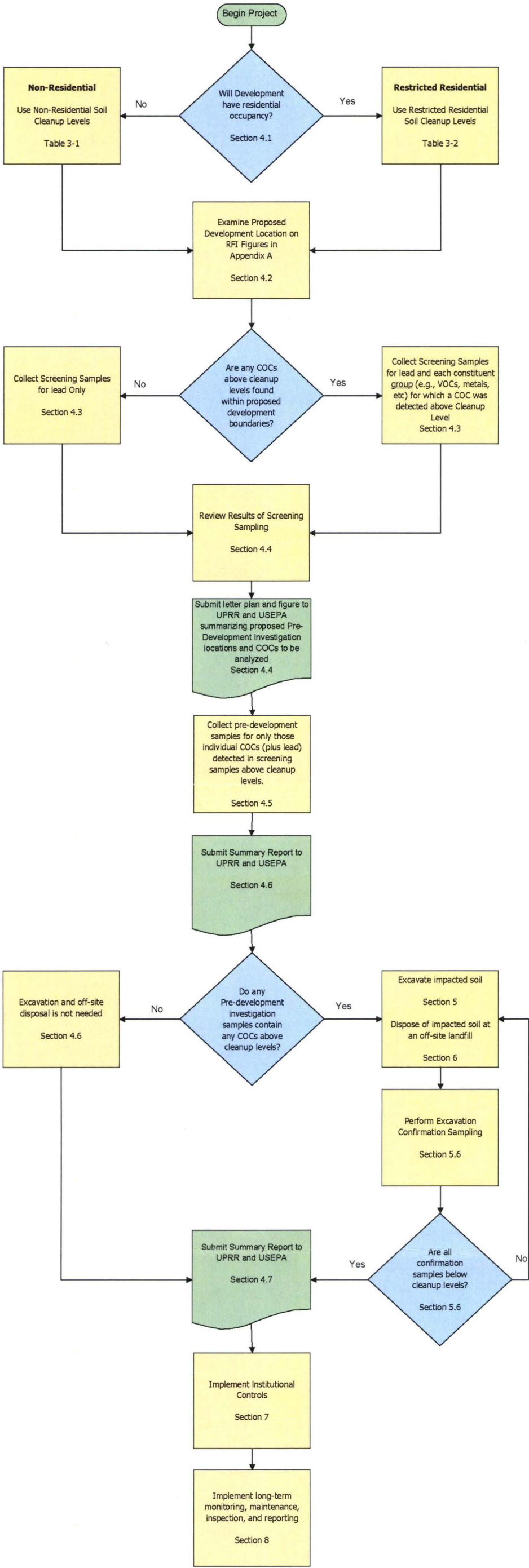


Table 3-1. Non-Residential Soil Cleanup Levels

Soil Constituent	Non-Residential Soil Cleanup Level (mg/kg)	USEPA Analytical Method
Acetone	54,000	8260B
Benzene	24	8260B
cis-1,2-Dichloroethene	150	8260B
Trans-1,2-Dichloroethene	230	8260B
Ethyl Benzene	6,000	8260B
Methylene Chloride	210	8260B
Toluene	2,000	8260B
Tetrachloroethene	13	8260B
1,1,1-Trichloroethane	1,200	8260B
Trichloroethene	1.1	8260B
1,2,4-Trimethylbenzene	170	8260B
Vinyl Chloride	7.5	8260B
Xylenes	4,500	8260B
Anthracene	100,000	8270C
Benzo(a)anthracene	21	8270C
Benzo(a)pyrene	2.1	8270C
Benzo(b)fluoranthene	2	8270C
Chrysene	2,100	8270C
Dibenzo(a,h)anthracene	2.1	8270C
Fluoranthene	22,000	8270C
Indeno(1,2,3-cd)pyrene	21	8270C
Pyrene	29,000	8270C
Naphthalene	190	8270C
Bis(2-ethylhexyl)phthalate	1,200	8270C
Chlordane	65	8081A
4,4-DDE	70	8081A
4,4-DDT	70	8081A
Dieldrin	1.1	8081A
Endosulfan II	3,700	8081A
Endrin aldehyde	180	8081A
PCBs (total all PCBs)	14	8082
Antimony	4,100	6010B
Arsenic	440	6010B
Cadmium	450	6010B
Chromium	4,500	6010B
Copper	41,000	6010B
Lead	1,218	6010B
Mercury	310	7471A
Selenium	5,100	6010B
Silver	5,100	6010B
Zinc	100,000	6010B

Table 3-2. Restricted Residential Soil Cleanup

Soil Constituent	Restricted Residential Soil Cleanup Level (mg/kg)	USEPA Analytical Method
Acetone	14,000	8260B
Benzene	0.66	8260B
cis-1,2-Dichloroethene	43	8260B
Trans-1,2-Dichloroethene	69	8260B
Ethyl Benzene	400	8260B
Methylene Chloride	8.9	8260B
Toluene	520	8260B
Tetrachloroethene	0.55	8260B
1,1,1-Trichloroethane	1,200	8260B
Trichloroethene	0.043	8260B
1,2,4-Trimethylbenzene	52	8260B
Vinyl Chloride	0.043	8260B
Xylenes	210	8260B
Anthracene	22,000	8270C
Benzo(a)anthracene	0.15	8270C
Benzo(a)pyrene	0.015	8270C
Benzo(b)fluoranthene	0.15	8270C
Chrysene	15	8270C
Dibenzo(a,h)anthracene	0.015	8270C
Fluoranthene	2,300	8270C
Indeno(1,2,3-cd)pyrene	0.15	8270C
Pyrene	2,300	8270C
Naphthalene	120	8270C
Bis(2-ethylhexyl)phthalate	35	8270C
Chlordane	1.6	8081A
4,4-DDE	1.7	8081A
4,4-DDT	1.7	8081A
Dieldrin	0.03	8081A
Endosulfan II	370	8081A
Endrin aldehyde	18	8081A
PCBs (total all PCBs)	0.22	8082
Antimony	31	6010B
Arsenic	22	6010B
Cadmium	39	6010B
Chromium	210	6010B
Copper	2,900	6010B
Lead	400	6010B
Mercury	23	7471A
Selenium	390	6010B
Silver	390	6010B
Zinc	23,000	6010B

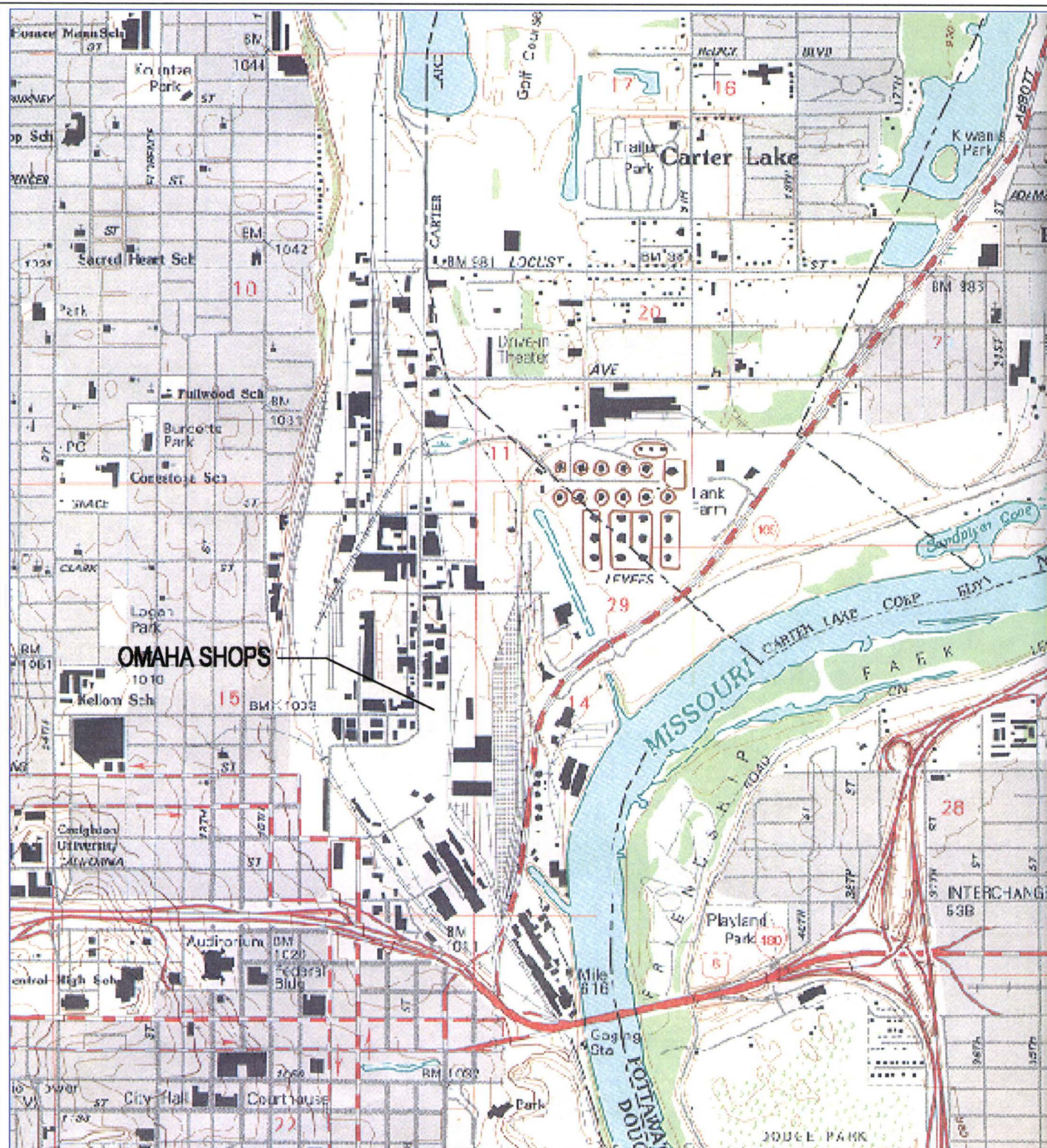
mg/kg - milligram/kilogram

**Table 3-3. Restricted Residential Soil Cleanup Levels
Compared to Maximum Detections from RFI Sampling**

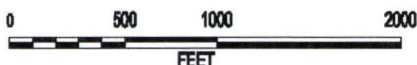
Soil Constituent	Restricted Residential Soil Cleanup Level (mg/kg)	Maximum Concentration Detected in Surface ¹ soil (mg/kg)	Maximum Concentration Detected in Subsurface ² Soil (mg/kg)	Maximum Concentration Detected in Acetylene Sludge Pit Soil (mg/kg)
Acetone	14,000		0.0528	
Benzene	0.66			0.0097
cis-1,2-Dichloroethene	43		0.891	
Trans-1,2-Dichloroethene	69			0.227
Ethyl Benzene	400			119
Methylene Chloride	8.9	0.0115	0.015	
Toluene	520	0.132	0.132	0.0157
Tetrachloroethene	0.55	6.96	115	5,550
1,1,1-Trichloroethane	1,200			26.6
Trichloroethene	0.043	0.0198	3.05	1.35
1,2,4-Trimethylbenzene	52			0.396
Vinyl Chloride	0.043			0.819
Xylenes	210		0.0279	634
Anthracene	22,000			2.9
Benzo(a)anthracene	0.15	5.2	1.6	14.2
Benzo(a)pyrene	0.015	5.3	1.3	15.9
Benzo(b)fluoranthene	0.15	5.7		2.4
Chrysene	15	5.3	1.3	14.4
Dibenzo(a,h)anthracene	0.015			3.3
Fluoranthene	2,300	8.5	8.5	17.9
Indeno(1,2,3-cd)pyrene	0.15	4		8.3
Pyrene	2,300	92	9.9	17.3
Naphthalene	120	2.2	2.2	0.154
Bis(2-ethylhexyl)phthalate	35			1.7
Chlordane	1.6		0.0408	
4,4-DDE	1.7	0.0255		
4,4-DDT	1.7	0.144		
Dieldrin	0.03	0.0389		
Endosulfan II	370	0.029		
Endrin aldehyde	18	0.0361		
PCBs (total all PCBs)	0.22	3.08		0.62
Antimony	31	1,230	31.5	
Arsenic	22	300	81.1	
Cadmium	39	8.9	36	36
Chromium	210		434	190
Copper	2,900	2080	2080	
Lead	400	4,220	3,020	3,400
Mercury	23	2.2	2.2	0.603
Selenium	390		6.9	
Silver	390	13.4	13.4	6.5
Zinc	23,000	2,140	1,360	

Notes:

- 1 - Surface Soil - soil from 0 to 1 ft below ground surface (bgs), excluding sludge pit samples
- 2 - Subsurface Soil - includes soil from depths greater than 1 ft bgs, excluding sludge pit samples
- Maximum detections obtained from OU2 RFI soil sampling (URS, 2001)
- Highlighted values show detections above the Restricted Residential Soil Cleanup Levels
- mg/kg - milligram per kilogram



BASE MAP SOURCE: USGS 7.5
MINUTE SERIES (TOPOGRAPHIC)
QUADRANGLE MAP OF OMAHA
NORTH, NE.-IA., 1994.



ARCADIS
BRIAN GUILLETTE
JOHN BRONFELT
BRET OVERHOLZER



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www.arcadis-us.com

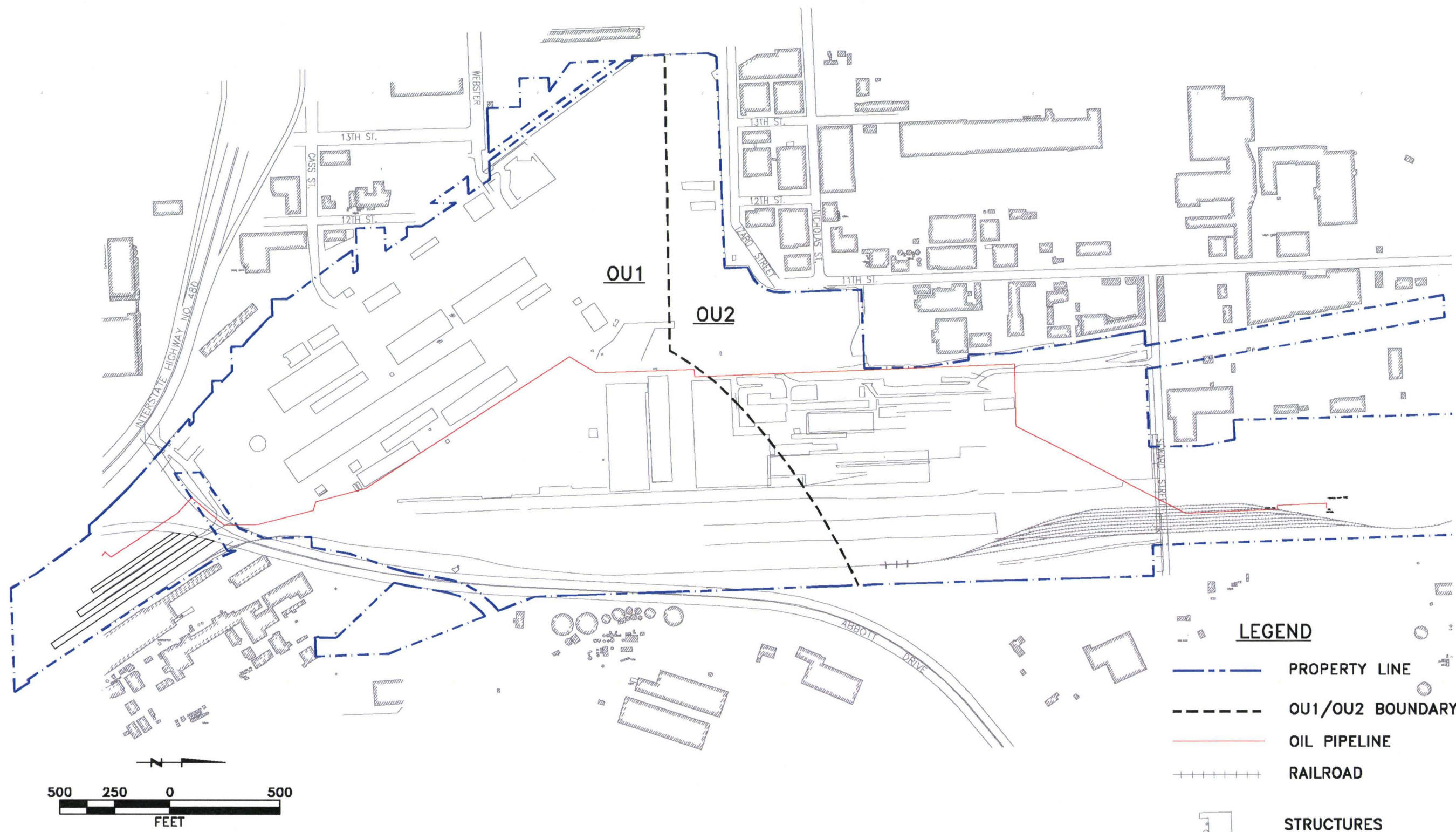


SITE MAP

UNION PACIFIC RAILROAD COMPANY
OMAHA, NEBRASKA

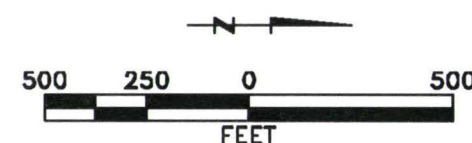


Project Number
KC001577.000
Drawing Date
1-21-08
Figure



LEGEND

- PROPERTY LINE
- OU1/OU2 BOUNDARY
- OIL PIPELINE
- RAILROAD
- STRUCTURES



PROPERTY MAP OF FORMER OMAHA SHOPS FACILITY SHOWING LOCATION OF OPERABLE UNITS

UNION PACIFIC RAILROAD COMPANY
OMAHA, NEBRASKA



8725 Rosahill
Suite 350
Lenexa, Kansas 66215
Tel: 913-492-0900 Fax: 913-492-0902
www.arcadis-us.com



Project Number
KC001557.000

Drawing Date
3-28-08

Figure
1-2

Area Manager
BRIAN_GUILLETTE
Project Manager
JOHN_SHONFELT
Task Manager
BRET_OVERHOLTZER
Technical Reviewer
BRET_OVERHOLTZER

ARCADIS

Appendix A

Soil Concentration Maps
from the OU2 RFI Report

DRAFT REPORT

RCRA FACILITY INVESTIGATION OPERABLE UNIT NO. 2 (OU2)

Omaha Shops



Prepared for
Union Pacific Railroad Company
Omaha, Nebraska

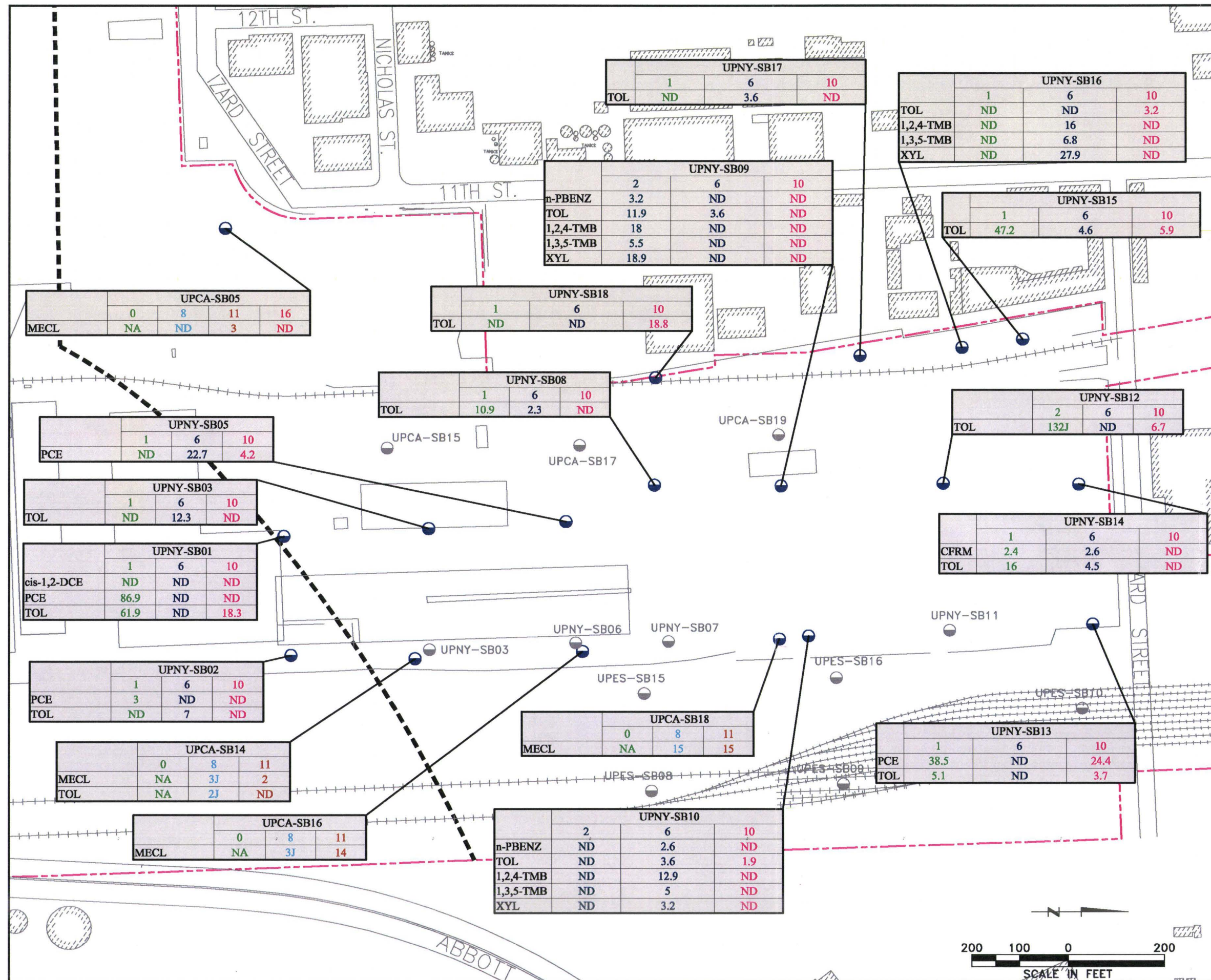


ENVIRONMENTAL MANAGEMENT

November 2001

URS

101 South 108th Avenue
Omaha, Nebraska



LEGEND

PROPERTY LINE

OU1/OU2 LINE

BUILDING SLAB

STRUCTURES

SOIL BORING LOCATION

SITE I.D.
SOIL BORING I.D.

		UPCA-SB02		SAMPLE DEPTH INTERVAL	CONCENTRATION IN μg/kg
		0	16		
DNB		4.1	2.6		
FANT		1.9	ND		

CA CONSTRUCTION AREA
NY NORTH YARD
GS GRACE STREET


0 - 1' SURFACE SOIL
4.5 - 6' BELOW GROUND SURFACE
6.5 - 8' BELOW GROUND SURFACE
8.5 - 10' BELOW GROUND SURFACE
9.5 - 11' BELOW GROUND SURFACE
14.5 - 16' BELOW GROUND SURFACE

1,4-DCB -1,4-Dichlorobenzene
1,3,5-TMB -1,3,5-Trimethylbenzene
BENZ -Benzene
cis-1,2-DCE -cis-1,2-Dichloroethene
CBENZ -Chlorobenzene
CFRM -Chloroform
1,1-DCE -Dichloroethene
MECL -Methylene chloride
n-BBENZ -n-Butylbenzene
n-PBENZ -n-Propylbenzene
PCA -1,1,1,2-Tetrachloroethane
PCE -Tetrachloroethene
1,2,4-TMB -1,2,4-Trimethylbenzene
TOL -Toluene
trans-1,2-DCE -trans-1,2-Dichloroethene
TCE -Trichloroethene
XYL -Xylenes, Total
VC -Vinyl Chloride


ND - non-detect
NA - not analyzed

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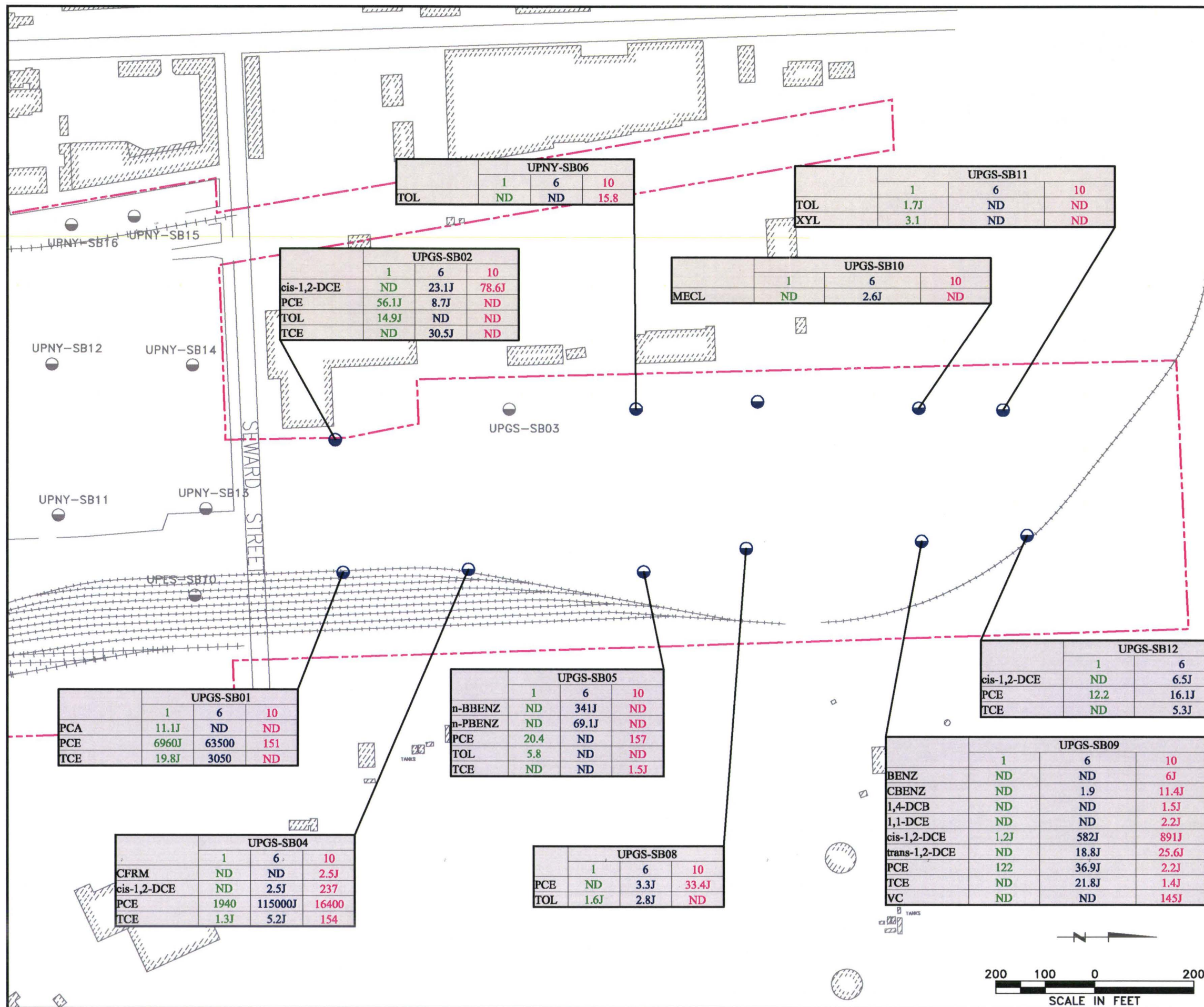
VOC CONCENTRATIONS
NORTH YARD SOIL

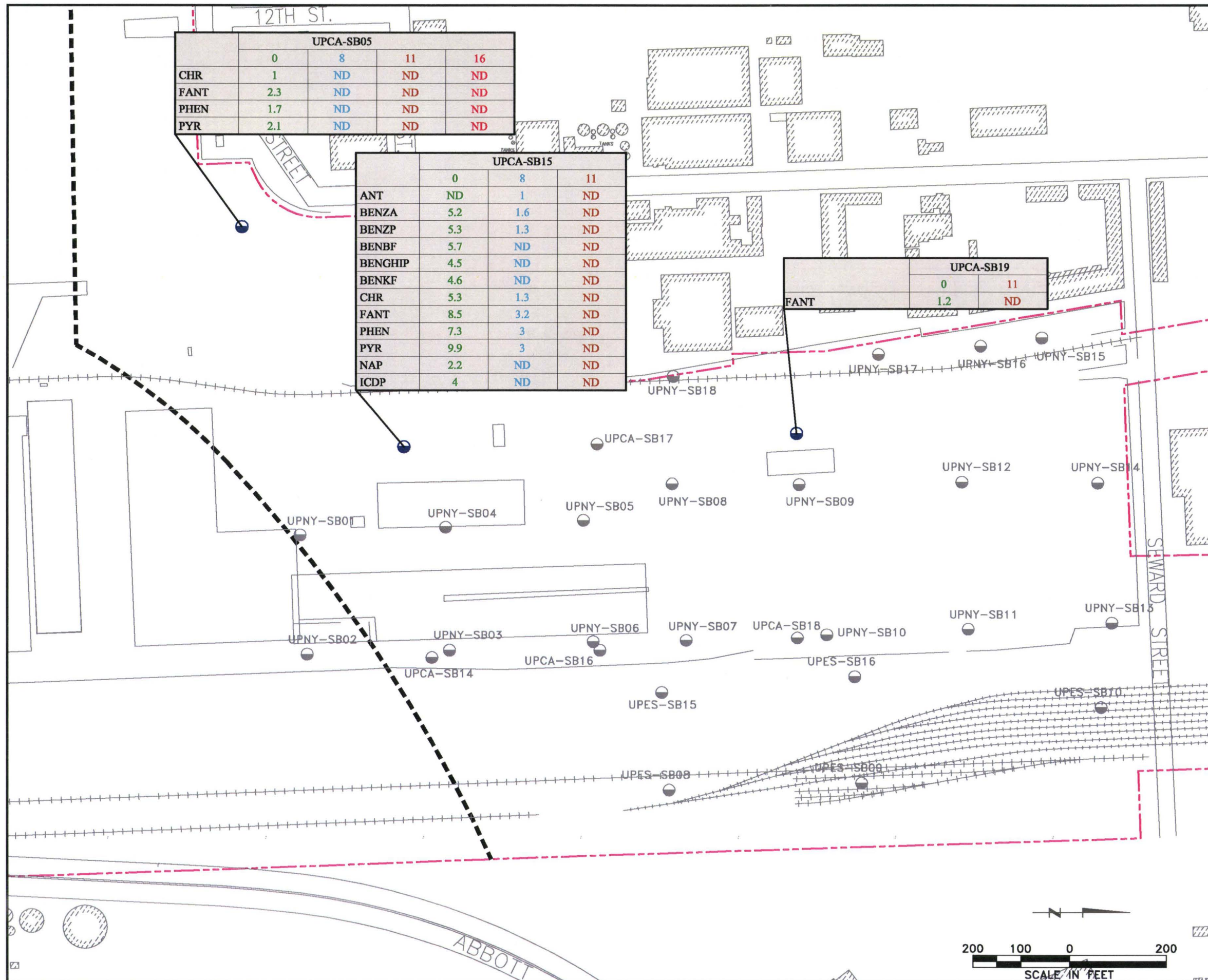


OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY



DRN BY	DAC	DATE	11/26/01	PROJECT NO.	45-091MC204.03	FIG. NO.	5-1a
CHK'D BY		DATE					



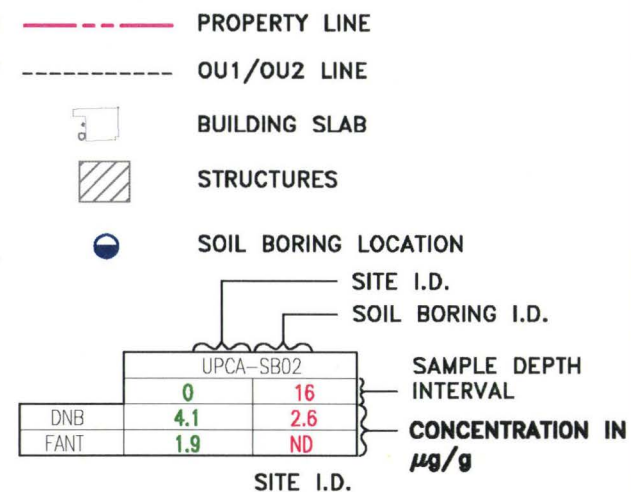


UPCA-SB05				
	0	8	11	16
CHR	1	ND	ND	ND
FANT	2.3	ND	ND	ND
PHEN	1.7	ND	ND	ND
PYR	2.1	ND	ND	ND

UPCA-SB15			
	0	8	11
ANT	ND	1	ND
BENZA	5.2	1.6	ND
BENZP	5.3	1.3	ND
BENBF	5.7	ND	ND
BENGHIP	4.5	ND	ND
BENKF	4.6	ND	ND
CHR	5.3	1.3	ND
FANT	8.5	3.2	ND
PHEN	7.3	3	ND
PYR	9.9	3	ND
NAP	2.2	ND	ND
ICDP	4	ND	ND

UPCA-SB19		
	0	11
FANT	1.2	ND

LEGEND



CA CONSTRUCTION AREA
NY NORTH YARD
GS GRACE STREET

0 - 1' SURFACE SOIL
6.5 - 8' BELOW GROUND SURFACE
9.5 - 11' BELOW GROUND SURFACE
14.5 - 16' BELOW GROUND SURFACE

ANT - Anthracene
BENZA - Benzo(a)anthracene
BENZP - Benzo(a)pyrene
BENBF - Benzo(b)fluoranthene
BENKF - Benzo(k)fluoranthene
CHR - Chrysene
FANT - Fluoranthene
NAP - Naphthalene
PHEN - Phenanthrene
PYR - Pyrene
BENGHIP - Benzo(ghi)perylene
ICDP - Indeno(1,2,3-cd)pyrene

ND - non-detect

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Drawing: O:\2002-03\91MC204\sp03\101300\5-2.dwg

SVOC CONCENTRATIONS
NORTH YARD SOIL

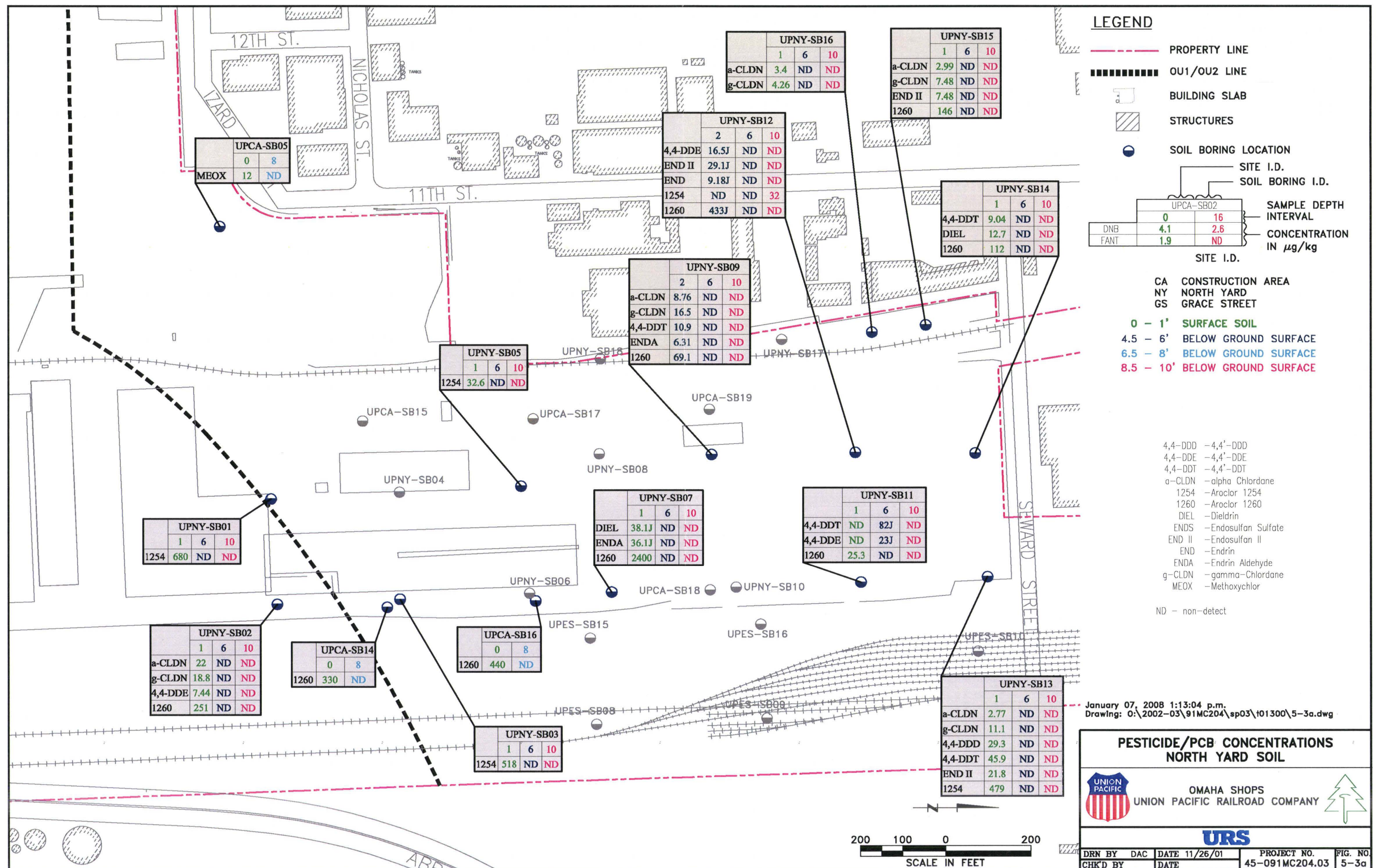


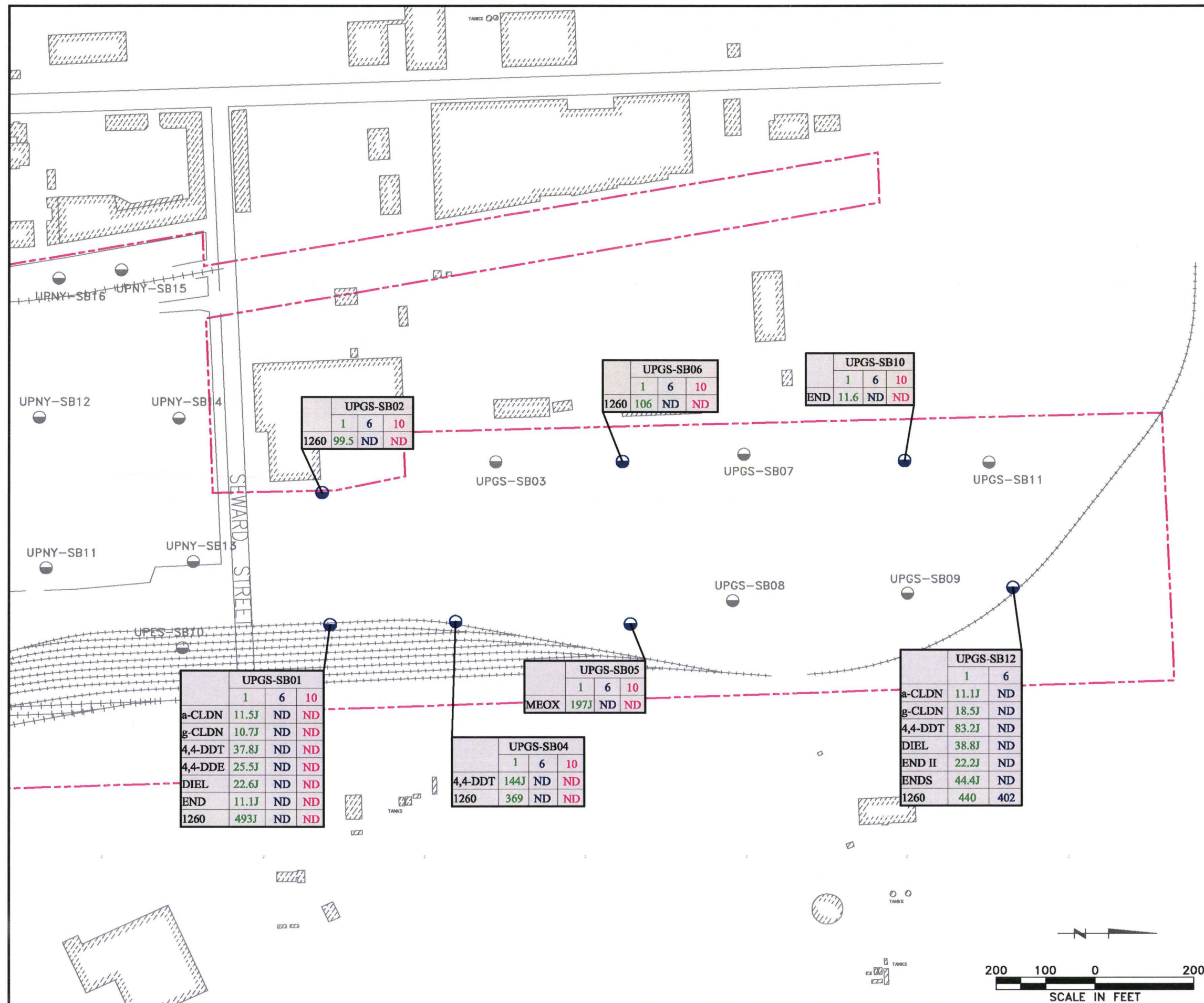
OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY



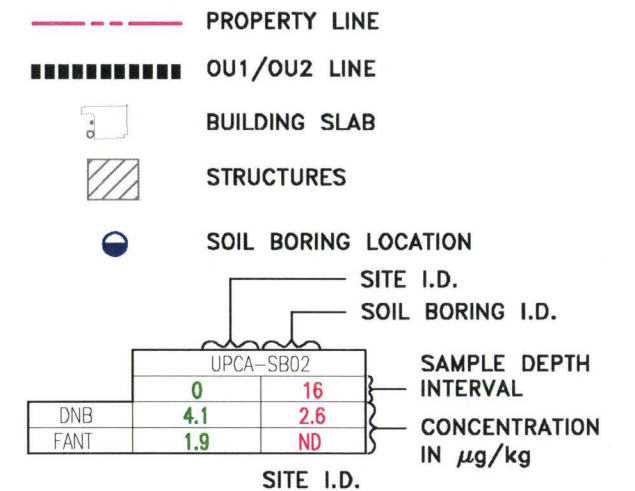
URS

DRN BY	DAC	DATE	11/26/01	PROJECT NO.	45-091MC204.03	FIG. NO.	5-2
CHK'D BY		DATE					





LEGEND



CA CONSTRUCTION AREA
NY NORTH YARD
GS GRACE STREET

0 - 1' SURFACE SOIL
4.5 - 6' BELOW GROUND SURFACE
6.5 - 8' BELOW GROUND SURFACE
8.5 - 10' BELOW GROUND SURFACE

4,4-DDD - 4,4'-DDD
4,4-DDE - 4,4'-DDE
4,4-DDT - 4,4'-DDT
a-CLDN - alpha Chlordane
1254 - Aroclor 1254
1260 - Aroclor 1260
DIEL - Dieldrin
ENDS - Endosulfan Sulfate
END II - Endosulfan II
END - Endrin
ENDA - Endrin Aldehyde
g-CLDN - gamma-Chlordane
MEOX - Methoxychlor

ND - non-detect

January 07, 2008 1:13:50 p.m.
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PESTICIDE/PCB CONCENTRATIONS GRACE STREET SOIL

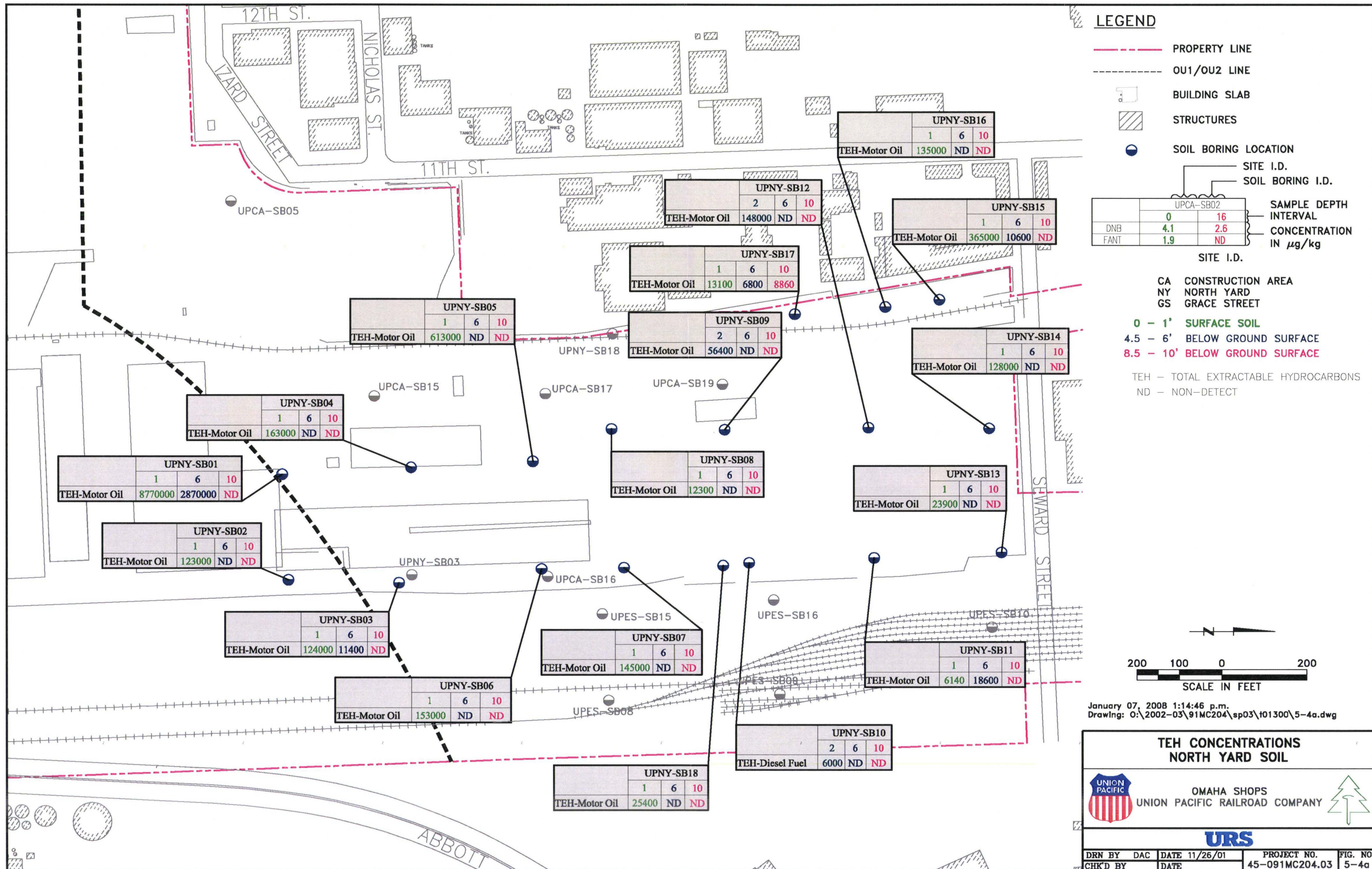


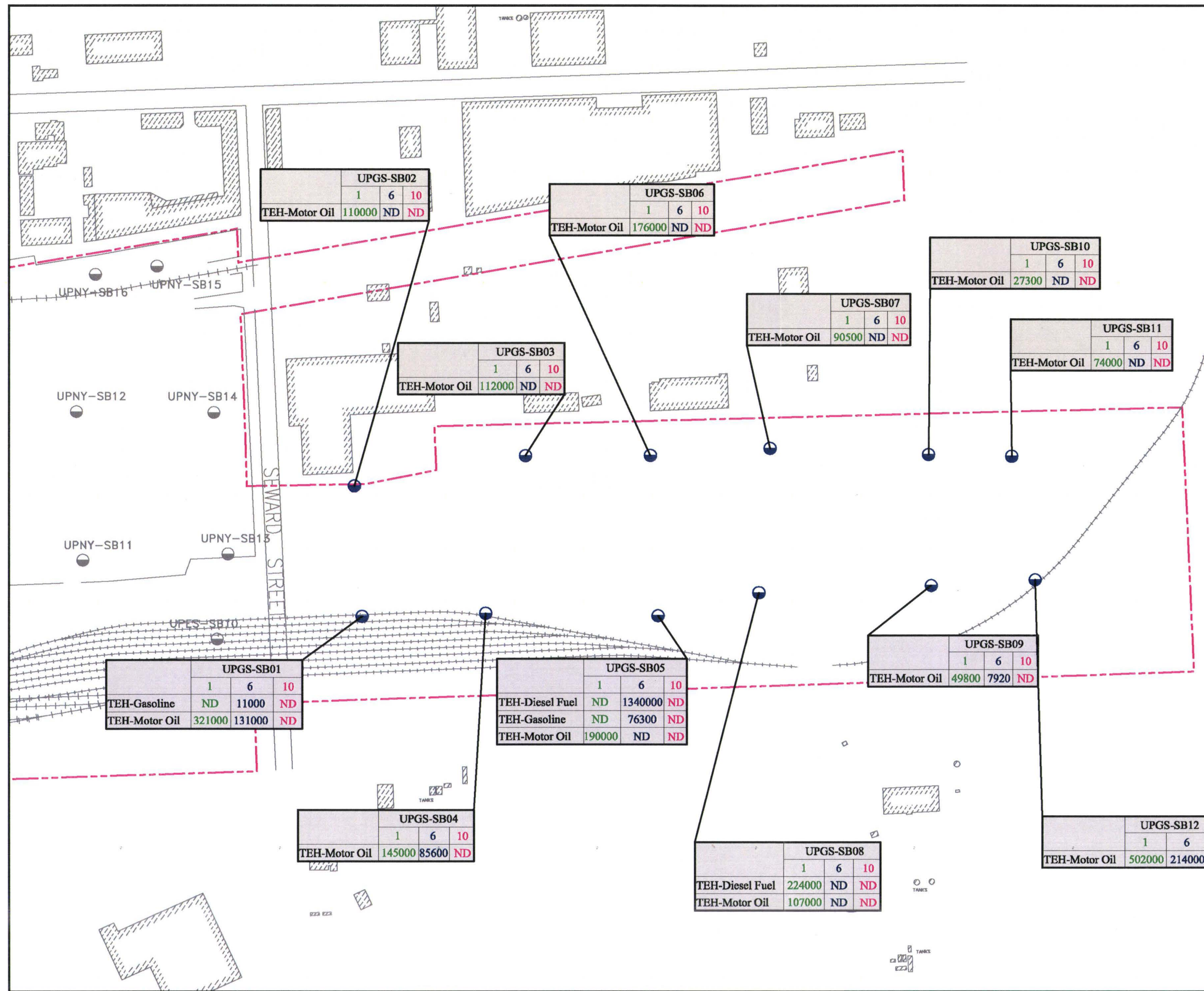
OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY



URS

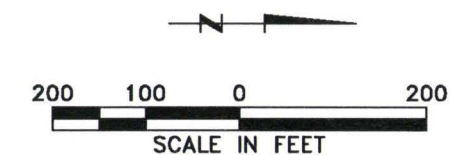
DRN BY DAC	DATE 11/26/01	PROJECT NO. 45-091MC204.03	FIG. NO. 5-3b
CHK'D BY	DATE		





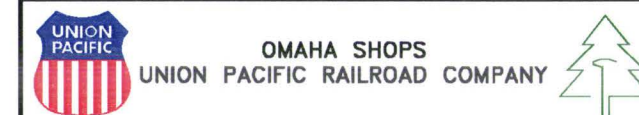
LEGEND

- PROPERTY LINE
 --- OU1/OU2 LINE
 [Symbol] BUILDING SLAB
 [Symbol] STRUCTURES
 [Symbol] SOIL BORING LOCATION
 [Symbol] SITE I.D.
 [Symbol] SOIL BORING I.D.
- | | UPCA-SB02 | | SAMPLE DEPTH INTERVAL | CONCENTRATION IN $\mu\text{g/kg}$ |
|------|-----------|-----|-----------------------|-----------------------------------|
| | 0 | 16 | | |
| DNB | 4.1 | 2.6 | | |
| FANT | 1.9 | ND | | |
- SITE I.D.
- CA CONSTRUCTION AREA
 NY NORTH YARD
 GS GRACE STREET
- 0 - 1' SURFACE SOIL
 4.5 - 6' BELOW GROUND SURFACE
 8.5 - 10' BELOW GROUND SURFACE
- TEH - TOTAL EXTRACTABLE HYDROCARBONS
 ND - NON-DETECT

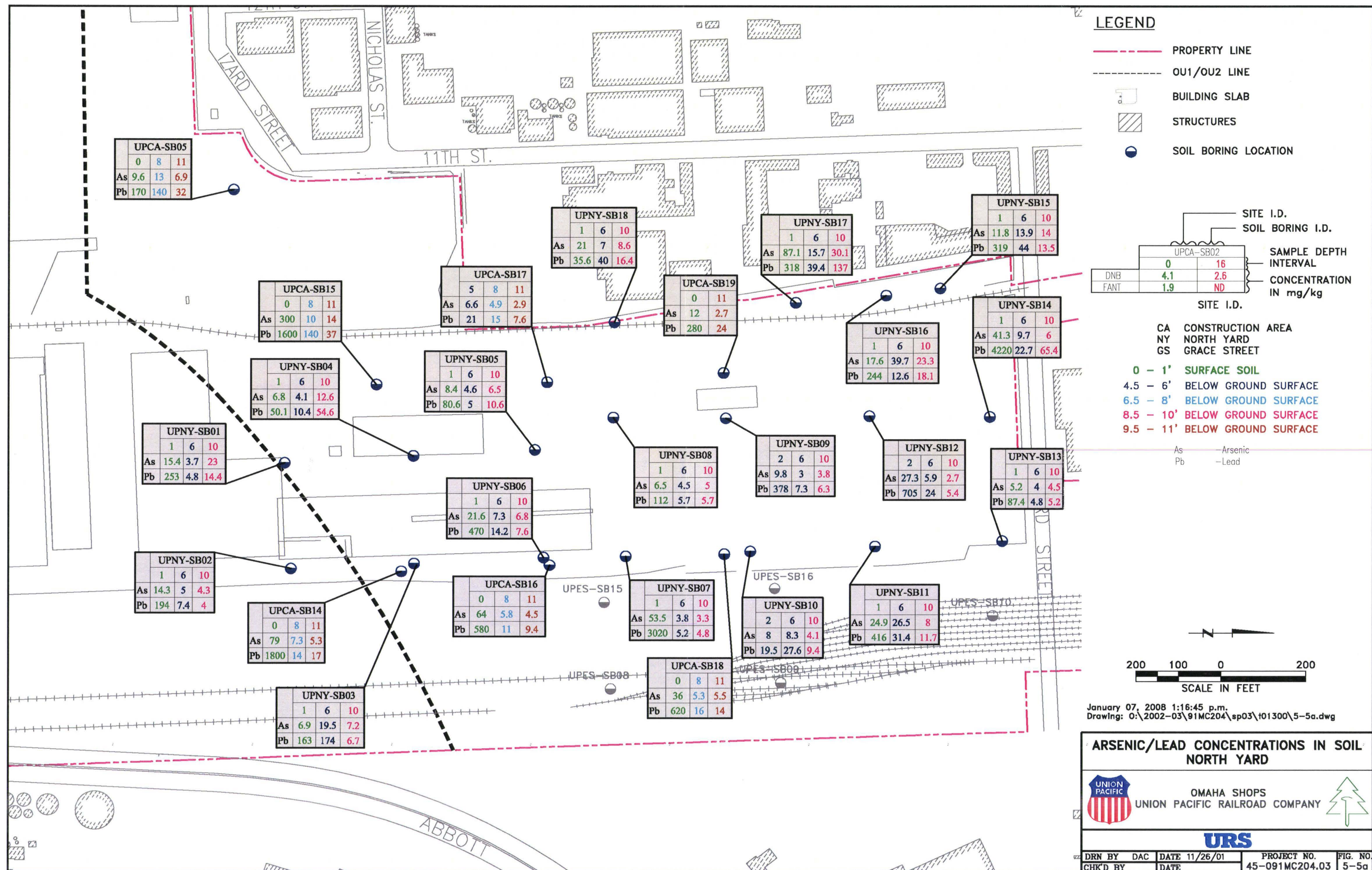


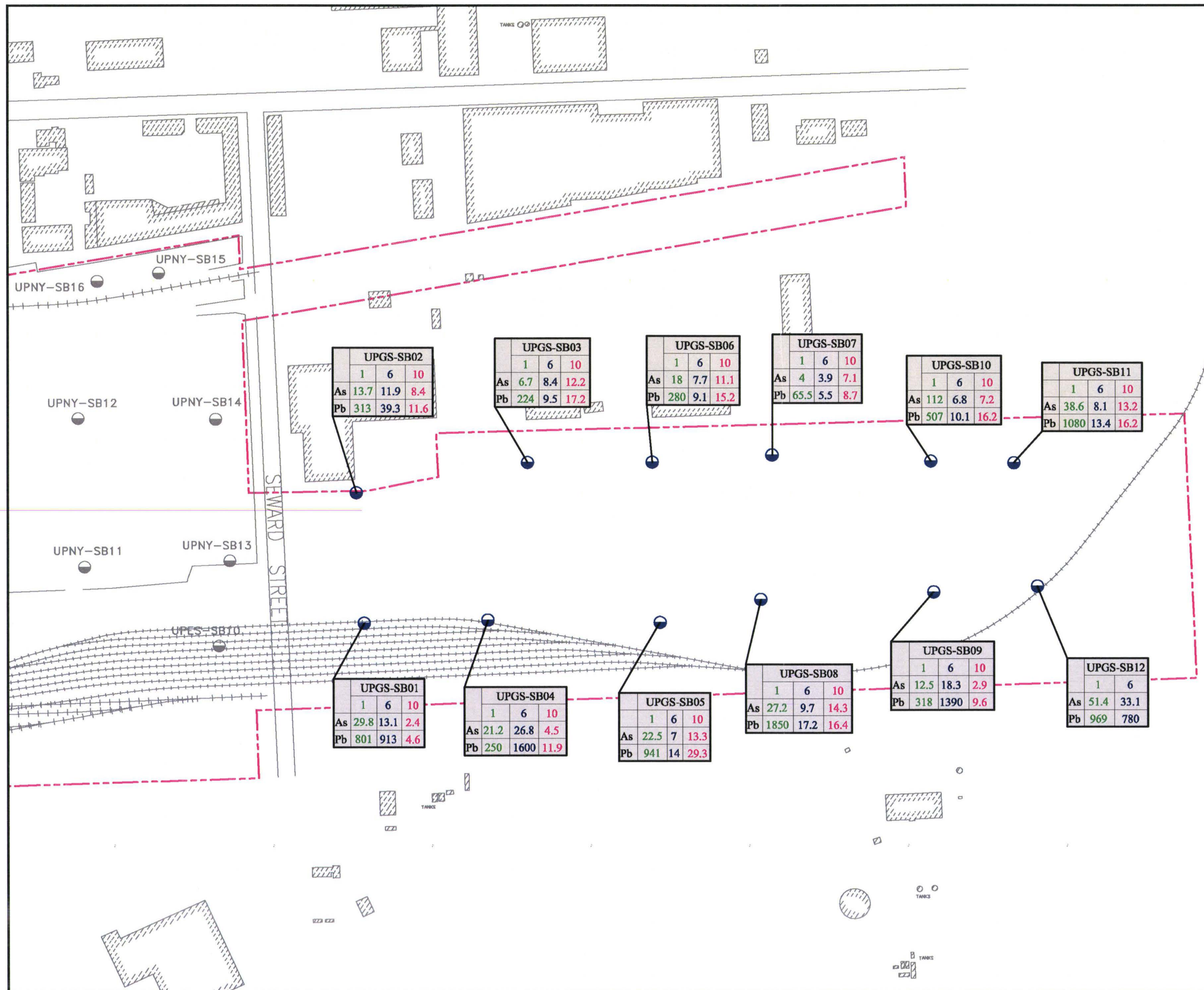
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TEH CONCENTRATIONS GRACE STREET SOIL



DRN BY DAC DATE 11/26/01 PROJECT NO. 45-091MC204.03 FIG. NO. 5-4b
 CHK'D BY DATE





LEGEND

- PROPERTY LINE
- OU1/OU2 LINE
- BUILDING SLAB
- STRUCTURES
- SOIL BORING LOCATION

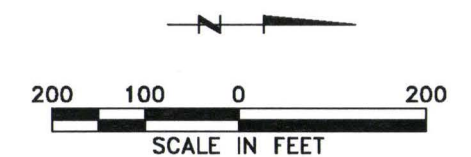
			SITE I.D.
			SOIL BORING I.D.
UPCA-SB02			
	0	16	SAMPLE DEPTH INTERVAL
DNB	4.1	2.6	
FANT	1.9	ND	CONCENTRATION IN mg/kg

SITE I.D.

CA CONSTRUCTION AREA
NY NORTH YARD
GS GRACE STREET

0 - 1' SURFACE SOIL
4.5 - 6' BELOW GROUND SURFACE
6.5 - 8' BELOW GROUND SURFACE
8.5 - 10' BELOW GROUND SURFACE
9.5 - 11' BELOW GROUND SURFACE

As - Arsenic
Pb - Lead



January 07, 2008 1:17:29 p.m.
Drawing: O:\2002-03\91MC204\sp03\101300\5-5b.dwg

ARSENIC/LEAD CONCENTRATIONS IN SOIL GRACE STREET








OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY



URS

DRN BY	DAC	DATE	11/26/01	PROJECT NO.	45-091MC204.03	FIG. NO.	5-5b
CHK'D BY		DATE					

LEGEND

- PROPERTY LINE
-  BUILDING SLAB
-  STRUCTURES
- APPROXIMATE EXTENT OF ACETYLENE SLUDGE PITS PRIOR TO INITIAL INTERIM MEASURES WORK
-  EXTENT OF REMAINING ACETYLENE SLUDGE PIT MATERIAL
-  TEST PIT LOCATION
-  HIGH TENSION ELECTRICAL TOWER
- SITE I.D.
- SOIL BORING I.D.

UPCA-SB02			SAMPLE DEPTH IN FEET	CONCENTRATION IN µg/kg
	0	16		
DNB	4.1	2.6		
FANT	1.9	ND		

1,1,1-TCA - 1,1,1-Trichloroethane
1,1-DCE - 1,1-Dichloroethene
1,2,4-TMB - 1,2,4-Trimethylbenzene
1,2-DBA - 1,2-Dibromoethane
1,2-DCB - 1,2-Dichlorobenzene
BENZ - Benzene
cis-1,2-DCE - cis-1,2-Dichloroethene
ETB - Ethylbenzene
PCE - Tetrachloroethene
TCE - Trichloroethylene
TMB - 1,2,4-Trimethylbenzene
TOL - Toluene
trans-1,2-DCE - trans-1,2-Dichloroethene
VC - Vinyl Chloride
XYL - Xylenes, Total

ND - non-detect



January 07, 2008 1:18:35 p.m.
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VOC CONCENTRATIONS
ACETYLENE SLUDGE PIT



OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY



URS

DRN BY	DAC	DATE	11/08/01	PROJECT NO.	FIG. NO.
CHK'D BY		DATE		45-091MC204.03	5-6

UPAS-TP04		
	2	7
1,2-DCB	378	16.8
cis-1,2-DCE	ND	89.1
trans-1,2-DCE	ND	33.3
ETB	6,990	202
PCE	1,450,000	ND
TOL	ND	14.6
TCE	440J	ND
1,2,4-TMB	396	11.3
VC	ND	311
XYL	39,900	1,200

UPAS-TP01		
	3	5
1,2-DBA	ND	9.7
cis-1,2-DCE	174	526
PCE	38,700	3,850
TOL	ND	7.8
TCE	ND	207
VC	ND	16.7
XYL	ND	18.4

UPAS-TP02		
	2	4
cis-1,2-DCE	ND	222
ETB	ND	5.7
PCE	1,840	3,950
TCE	ND	821
TMB	ND	5.3
TOL	ND	15.7
XYL	ND	27.5

UPAS-TP03		
	2	4
cis-1,2-DCE	1,360J	1,570
PCE	10,600	5,780
TCE	548J	398

UPAS-TP06		
	3	8
1,2-DCB	24,000	ND
cis-1,2-DCE	ND	10,900
trans-1,2-DCE	ND	227
ETB	119,000	ND
PCE	5,550,000	18,200
1,1,1-TCA	26,600	ND
TCE	ND	251
VC	ND	819
XYL	634,000	ND

UPAS-TP05		
	5	7
BENZ	ND	9.7J
1,2-DCB	1,190	ND
1,1-DCE	ND	8.1J
cis-1,2-DCE	564	2,770J
trans-1,2-DCE	ND	130J
ETB	2,900	15.2J
PCE	1,020,000	2,440J
TOL	ND	8.1J
TCE	1,350J	12.7J
1,2,4-TMB	253	ND
VC	ND	266J
XYL	15,500	ND

LEGEND

--- PROPERTY LINE

BUILDING SLAB

STRUCTURES

----- APPROXIMATE EXTENT OF ACETYLENE SLUDGE PITS PRIOR TO INITIAL INTERIM MEASURES WORK

EXTENT OF REMAINING ACETYLENE SLUDGE PIT MATERIAL

TEST PIT LOCATION

HIGH TENSION ELECTRICAL TOWER

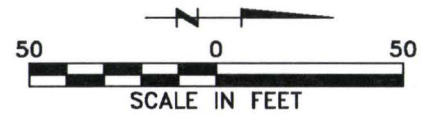
SITE I.D.
SOIL BORING I.D.

	UPCA-SB02	
	0	16
DNB	4.1	2.6
FANT	1.9	ND

SAMPLE DEPTH IN FEET

CONCENTRATION IN µg/g

- 1260 - Aroclor 1260
 - 2-MNAP - 2-Methylnaphthalene
 - ANT - Anthracene
 - BENBF - Benzo(b)fluoranthene
 - BENGHIP - Benzo(ghi)perylene
 - BENKF - Benzo(k)fluoranthene
 - BENZA - Benzo(a)anthracene
 - BENZP - Benzo(a)pyrene
 - CHR - Chrysene
 - DBENA - Dibenzo(a,h)anthracene
 - FANT - Fluoranthene
 - ICDP - Indeno(1,2,3-cd)pyrene
 - NAP - Naphthalene
 - PHEN - Phenanthrene
 - PYR - Pyrene
 - TEH - Motor Oil - TEH - Motor Oil
- ND - non-detect



January 07, 2008 1:19:28 p.m.
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SVOC/PCB/TEH CONCENTRATIONS
ACETYLENE SLUDGE PIT

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

DRN BY	DAC	DATE	11/08/01	PROJECT NO.	FIG. NO.
CHK'D BY		DATE		45-091MC204.03	5-7

	UPAS-TP01	
	3	5
BENZA	3.1	ND
BENZP	2.3	ND
BENBF	2.4	ND
BENKF	2.6	ND
CHR	3	ND
FANT	9.2	ND
NAP	ND	0.154
PHEN	7.1	ND
PYR	8.9	ND
TEH - Motor Oil	300J	ND

	UPAS-TP04	
	2	7
PHEN	0.72	ND
1260	0.31J	ND
TEH - Motor Oil	290J	ND








	UPAS-TP02	
	2	4
1260	0.48	ND
TEH - Motor Oil	850J	ND

	UPAS-TP03	
	2	4
ANT	ND	2.9J
BENZA	ND	14.2J
BENZP	ND	15.9J
BENBF	ND	13.8J
BENGHIP	ND	8.1J
BENKF	ND	14.2J
CHR	ND	14.4J
DBENA	ND	3.3J
FANT	ND	17.9J
ICDP	ND	8.3J
PHEN	ND	9.7J
PYR	ND	17.3J
TEH - Motor Oil	11,000J	450

	UPAS-TP06	
	3	8
CHR	ND	0.52
FANT	ND	1.2J
2-MNAP	4.1J	ND
PHEN	5.6J	1.2J
PYR	ND	0.97J
TEH - Motor Oil	13,000J	130J

	UPAS-TP05	
	5	7
ANT	0.66	ND
BENZA	1.7	ND
BENZP	1.5	ND
BENBF	1.5	ND
BENKF	1.3	ND
CHR	1.7	ND
FANT	4.6	ND
2-MNAP	1.2	ND
PHEN	3.7	ND
PYR	4.2	ND
1260	0.067J	ND
TEH - Motor Oil	350J	ND

LEGEND

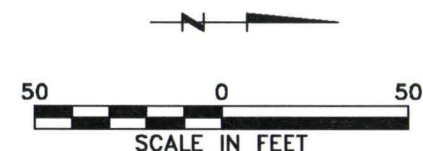
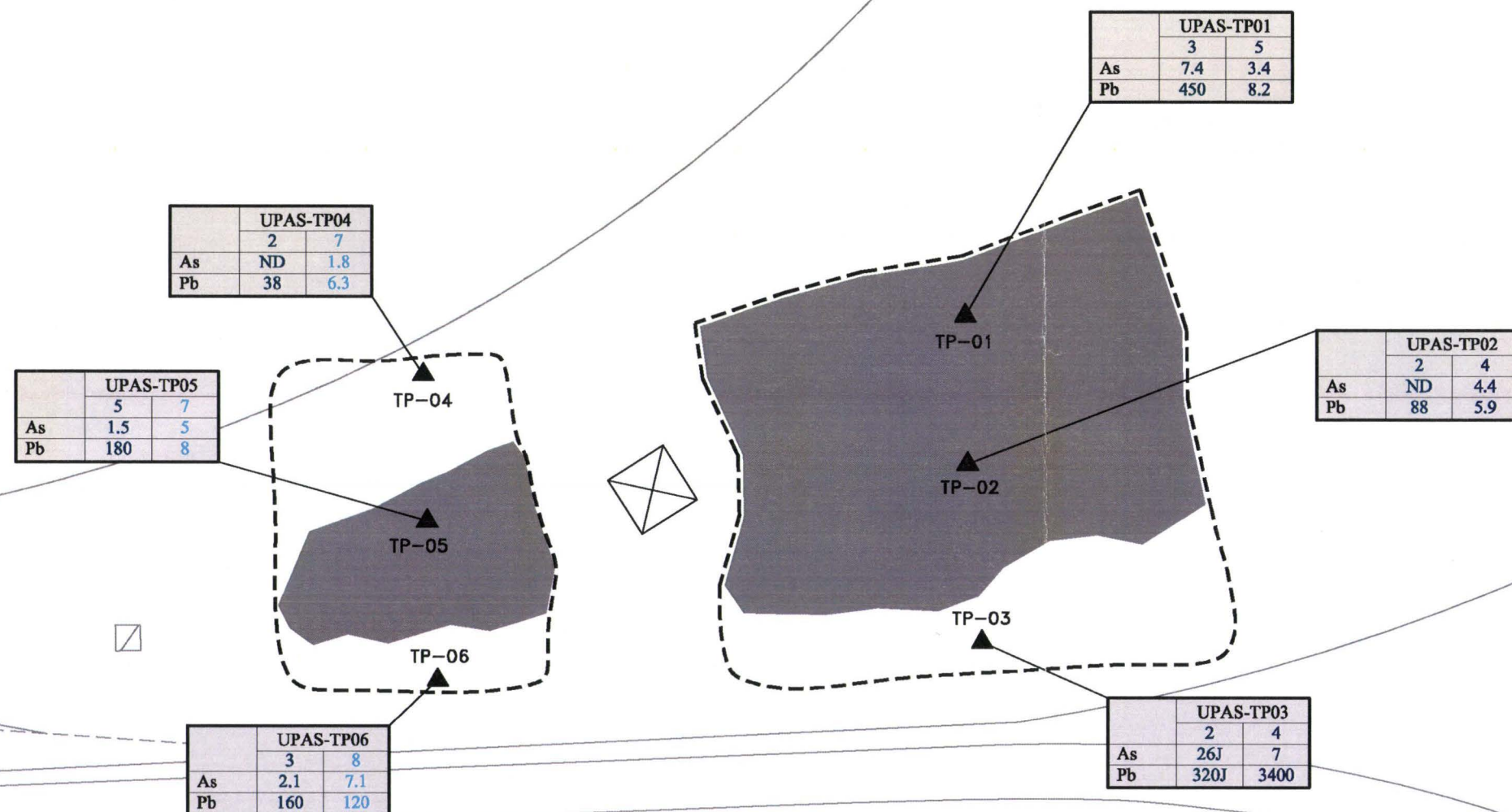
-  PROPERTY LINE
-  BUILDING SLAB
-  STRUCTURES
-  APPROXIMATE EXTENT OF ACETYLENE SLUDGE PITS PRIOR TO INITIAL INTERIM MEASURES WORK
-  EXTENT OF REMAINING ACETYLENE SLUDGE PIT MATERIAL
-  TEST PIT LOCATION
-  HIGH TENSION ELECTRICAL TOWER

SITE I.D.		
SOIL BORING I.D.		
UPCA-SB02		
	0	16
DNB	4.1	2.6
FANT	1.9	ND

SAMPLE DEPTH IN FEET

CONCENTRATION IN mg/kg

As - Arsenic
Pb - Lead
ND - non-detect



January 15, 2008 9:27:01 a.m.
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ARSENIC/LEAD CONCENTRATIONS ACETYLENE SLUDGE PIT



OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY



URS

DRN BY	DAC	DATE	11/08/01	PROJECT NO.	FIG. NO.
CHK'D BY		DATE		45-091MC204.03	5-8

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Appendix B

Sampling and Analysis Plan

(Submitted as a Separate
Work Plan)

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Appendix C

Quality Assurance
Project Plan

(Submitted as a
Separate Work Plan)

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Appendix D

Uniform Hazardous Waste Manifest

Butler County Landfill
Special Waste Permit Application

SPECIAL WASTE PERMIT AND INSTRUCTIONS

- The generator must determine if the waste is hazardous or dangerous before completing a permit application
- The special waste permit application must be in the name of the generator of the waste and signed by an authorized representative who is responsible for the accuracy of all information submitted.
- Recertification is required for on-going special waste streams prior to the permit expiration date
- A copy of the approved special waste permit must be shown to the gatehouse attendant upon delivery at the facility.

SPECIAL WASTE PERMIT APPLICATION

BUTLER COUNTY LANDFILL INC.

3588 R Rd

David City, NE 68632

Phone (402) 367-4662

Fax (402) 367-4079

Disposal Facility BUTLER COUNTY LANDFILL INC 3558 R ROAD DAVID CITY, NE 68632

Generator name and address _____

Billing name & address _____

Waste description _____

Quantity _____ Frequency of disposal ☐ One-time ☐ Monthly ☐ Other _____

Process generating waste _____

Waste address (include county & zip code) _____

Contact _____ Phone ____/____/____ Fax ____/____/____

Transporter _____ Phone ____/____/____ Fax ____/____/____

PHYSICAL CHARACTERISTICS AND DOCUMENTATION

Physical state ☐ Solid ☐ Semi-solid ☐ Dusty ☐ Sludge ☐ Color _____Analytical results ☐ TPH (PCS) ☐ Volatiles ☐ pH ☐ TCLP-Metals
☐ BTEX ☐ Pesticides ☐ PCB ☐ Other _____Sample source ☐ Pile ☐ In-ground ☐ Pit bottom ☐ Other _____Additional information ☐ MSDS ☐ Process knowledge ☐ Other _____

NON-HAZARDOUS DETERMINATION

Under 40 CFR Part 261, is this a Listed or Characteristic waste? ☐ Yes ☐ NoIs waste classified as a state-only or provincial hazardous waste? ☐ Yes ☐ NoIs waste covered or restricted from landfilling by any permit? ☐ Yes ☐ No

Basis for non-hazardous determination _____

WASTE CERTIFICATION STATEMENT

I hereby certify that all information contained herein is true and correct, and the material described is properly identified, classified, packaged, labeled, and prepared as indicated. I certify this waste is not hazardous or dangerous as defined by the U S EPA, or the state or province of origin. I certify this waste does not contain any regulated radioactive materials. I certify that all samples used for this analysis are representative of the materials described herein. I will notify the company if there is a change in the composition of, or process generating this waste stream.

Name (print) _____

Authorized representative's signature _____

Title _____

Date _____

Form EC1004700

REPRESENTATIVE SAMPLE CERTIFICATION

INSTRUCTIONS This form must be completed in order to determine the acceptability of the waste described in the Special Waste Permit Application for disposal at a municipal solid waste landfill. Analytical data for certain wastes is required for an adequate assessment of waste composition and regulatory status. This form is used to certify that the analytical data presented was derived from testing a *representative* sample, which reflects the physical characteristics and chemical components in the same proportion as the total waste stream. A representative sample may be obtained using methods specified in federal (40 CFR Part 261, Appendix I) or state regulations.

SECTION A DESCRIBE SAMPLING POINT OR LOCATION

☐ Pile ☐ In-ground ☐ Pit bottom ☐ Drum ☐ Other _____

SECTION B SAMPLING METHOD

- ☐ I have obtained a representative sample of the waste material described in the attached special waste permit application according to the sampling methods specified in 40 CFR Part 261.
- ☐ I have obtained a representative sample of the waste material described in the attached special waste permit application by an equivalent method.

SECTION C REPRESENTATIVE DATA CERTIFICATION

Generators' name _____

Waste type _____

Date sample collected _____

Samplers' name _____

Samplers' employer _____

SECTION D REPRESENTATIVE SAMPLE CERTIFICATION

I hereby certify that the analytical data presented was derived from testing a representative sample taken in accordance with one of the methods listed in Section A of this form.

_____ Name	_____ Authorized representative's signature
_____ Title	_____ Date

Lone Mountain Landfill
Hazardous Waste Permit Application

**CERTIFICATE OF NON-HAZARDOUS WASTE AND
AFFIDAVIT REQUIRED BY ODEQ RULE 252:205-9-6(b)(2)
CERTIFYING NON-HAZARDOUS WASTE**

I certify that the waste described in this and attached documents is not a listed hazardous waste as described by 40 CFR Part 261, Subpart D and that the waste described is not contaminated with a listed hazardous waste. I further certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

_____, here called "Generator", has contracted with the Lone Mountain Facility, here called "Contractor", for management of the solid waste described below, and Generator hereby certifies and warrants to Contractor that the solid waste to be so managed is not "hazardous waste" as the term is defined in Title 42 United States Code 6903 because said waste meets the following conditions:

- a) Said waste is excluded from regulation because it meets the provisions of Title 40 Code of Federal Regulations 261.4 and/or,
- b) Said waste is not listed as a hazardous waste in Subpart D of Title 40 Code of Federal Regulations Part 261, and said waste is not classified as a hazardous waste in Subpart C of Title 40 Code of Federal Regulations Part 261 as a result of actual testing or knowledge of the hazard characteristics of the waste in the light of the materials or process used.

Lone Mountain Facility Acceptance No:

Description of Non-hazardous Waste:

Origin of Waste:

Typical Analysis of Waste:

Physical/Chemical Constituents	Concentration or Volume %

Dated _____, _____ Generator _____

By _____ Title _____

E. CONSTITUENTS -- Are these values based on testing or knowledge?

☐ Knowledge

☐ Testing

If constituent concentrations are based on analytical testing, analysis must be provided. If based on knowledge, basis of knowledge must be provided below.

RCRA	REGULATED METALS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL ppm
D004	ARSENIC	5.0		
D005	BARIUM	100.0		
D006	CADMIUM	1.0		
D007	CHROMIUM	5.0		
D008	LEAD	5.0		
D009	MERCURY	0.2		
D010	SELENIUM	1.0		
D011	SILVER	5.0		

RCRA	VOLATILE COMPOUNDS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL ppm
D018	BENZENE	0.5		
D019	CARBON TETRACHLORIDE	0.5		
D021	CHLOROBENZENE	100.0		
D022	CHLOROFORM	6.0		
D028	1,2-DICHLOROETHANE	0.5		
D029	1,1-DICHLOROETHYLENE	0.7		
D035	METHYL ETHYL KETONE	200.0		
D039	TETRACHLOROETHYLENE	0.7		
D040	TRICHLOROETHYLENE	0.5		
D043	VINYL CHLORIDE	0.2		

RCRA	SEMI-VOLATILE COMPOUND	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL ppm
D023	o-CRESOL	200.0		
D024	m-CRESOL	200.0		
D025	p-CRESOL	200.0		
D026	CRESOL (TOTAL)	200.0		
D030	1,4-DICHLOROBENZENE	7.5		
D031	2,4-DINITROTOLUENE	0.13		
D032	HEXACHLOROBENZENE	0.13		
D033	HEXACHLOROBUTADIENE	0.5		
D034	HEXACHLOROETHANE	3.0		
D036	NITROBENZENE	2.0		
D037	PENTACHLOROPHENOL	100.0		
D038	PYRIDINE	5.0		
D041	2,4,5-TRICHLOROPHENOL	400.0		
D042	2,4,6-TRICHLOROPHENOL	2.0		

RCRA	PESTICIDES AND HERBICIDES	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL ppm
D012	ENDRIN	0.02		
D013	LINDANE	0.4		
D014	METHOXYCHLOR	10.0		
D015	TOXAPHENE	0.5		
D016	2,4-D	10.0		
D017	2,4,5-TP (SILVEX)	1.0		
D020	CHLORDANE	0.03		
D031	HEPTACHLOR (AND ITS EPOXIDE)	0.008		

OTHER METALS	MIN	MAX	UOM
ALUMINUM			
ANTIMONY			
BERYLLIUM			
CALCIUM			
COPPER			
MAGNESIUM			
MOLYBDENUM			
NICKEL			
POTASSIUM			
SILICON			
SODIUM			
THALLIUM			
TIN			
VANADIUM			
ZINC			

NON-METALS	MIN	MAX	UOM
BROMINE			
CHLORINE			
FLUORINE			
IODINE			
SULFUR			

OTHER NON-METALS	MIN	MAX	UOM
AMMONIA			
REACTIVE SULFIDE			
CYANIDE-TOTAL			
CYANIDE AMENABLE			
CYANIDE REACTIVE			

OTHER CHEMICALS	MIN	MAX	UOM
PHENOL			
Total Petroleum Hydrocarbons			

OTHER	HOCs	PCBs
	NONE	NONE
	< 1000 PPM	< 50 PPM
	>= 1000 PPM	>= 50 PPM
		IF PCBs ARE PRESENT, IS THE WASTE REGULATED BY TSCA 40 CFR 761?
		YES NO

ADDITIONAL HAZARD

DOES THIS WASTE HAVE ANY UNDISCLOSED HAZARDS OR PRIOR INCIDENTS ASSOCIATED WITH IT, WHICH COULD AFFECT THE WAY IT SHOULD BE HANDLED?

YES NO (If yes, explain)

ASBESTOS
DEA REGULATED SUBSTANCES
DIOXIN
EXPLOSIVE
HERBICIDE
FUMING / SMOKING WASTE

INFECTIOUS, PATHOGENIC, OR ETIOLOGICAL AGENT
OXIDIZER
OSHA REGULATED CARCINOGENS
PESTICIDE
POLYMERIZABLE
RADIOACTIVE

REDUCING AGENT
SHOCK SENSITIVE
SPONTANEOUSLY IGNITES WITH AIR
THERMALLY SENSITIVE
WATER REACTIVE

NONE OF THE ABOVE

F. REGULATORY STATUS

YES NO USEPA HAZARDOUS WASTE?

 YES NO DO ANY STATE WASTE CODES APPLY?

 YES NO IS THIS WASTE PROHIBITED FROM LAND DISPOSAL WITHOUT FURTHER TREATMENT PER 40 CFR PART 268?
 LDR CATEGORY:
 VARIANCE INFO:
 YES NO IS THIS A UNIVERSAL WASTE?
 YES NO IS THIS A WASTEWATER PER 40 CFR PART 268.27?
 YES NO IF ANY WASTE CODES D001, D002, D003 (OTHER THAN REACTIVE CYANIDE OR REACTIVE SULFIDE), D004-D0011, D012-D017 NON-WASTEWATERS, OR D018- D043 APPLY, ARE ANY UNDERLYING HAZARDOUS (UHCs) PRESENT ABOVE UNIVERSAL TREATMENT STANDARDS (UTS)?
 YES NO DOES TREATMENT OF THIS WASTE GENERATE A F006 OR F019 SLUDGE?
 YES NO IS THIS WASTE SUBJECT TO CATEGORICAL PRETREATMENT DISCHARGE STANDARDS?
 IF YES, SPECIFY POINT SOURCE CATEGORY LISTED IN 40 CFR PART 401.
 YES NO IS THIS WASTE REGULATED UNDER THE BENZENE NESHAP RULES?
 IF YES, IS THE GENERATOR'S TOTAL ANNUAL BENZENE >= 10 Megagrams? YES NO
 YES NO DOES THIS WASTE CONTAIN VOC'S IN CONCENTRATIONS >=500 PPM?
 YES NO DOES THE WASTE CONTAIN GREATER THAN 20% OF ORGANIC CONSTITUENTS WITH A VAPOR PRESSURE >= .3KPA (.044 PSIA)?
 YES NO DOES THIS WASTE CONTAIN AN ORGANIC CONSTITUENT WHICH IN ITS PURE FORM HAS A VAPOR PRESSURE GREATER THAN 77 KPa (11.2PSIA)?
 YES NO IS THIS CERCLA REGULATED (SUPERFUND) WASTE ?
 YES NO IS THIS WASTE REGULATED UNDER THE OZONE DEPLETING SUBSTANCE ACT FOR ONTARIO?

G. D.O.T INFORMATION: (Include proper shipping name, hazard class and ID number).
 US D.O.T. DESCRIPTION: _____

H. TRANSPORTATION REQUIREMENTS

ESTIMATED SHIPMENT FREQUENCY: ONE TIME WEEKLY MONTHLY QUARTERLY YEARLY OTHER

IF BULK LIQUID OR BULK SOLID PLEASE INDICATE THE EXPECTED NUMBER OF LOADS PER SHIPPING FREQUENCY:

CONTAINERIZED	BULK LIQUID	BULK SOLID
CONTAINERS/SHIPMENT	GALLONS/SHIPMENT:	SHIPMENT UOM:
STORAGE CAPACITY:	FROM TANKS: TANK SIZE	TON
CONTAINER TYPE:	FROM DRUMS	PER SHIPMENT:
CUBIC YARD BOX	VEHICLE TYPE:	MIN
PALLET	VAC TRUCK	MAX
TOTE TANK	TANK TRUCK	STORAGE CAPACITY
OTHER:	RAILROAD TANK CAR	TON/YD
DRUM SIZE:	CHECK COMPATIBLE STORAGE MATERIALS.	VEHICLE TYPE:
CONTAINER MATERIAL:	STEEL	DUMP TRAILER
STEEL	RUBBER LINED	ROLL OFF BOX
FIBER	DERAKANE	INTERMODAL ROLLOFF BOX
PLASTIC	OTHER	CUSCO/VECTOR
OTHER		OTHER

I. SPECIAL REQUEST

SPECIFIC DISPOSAL RESTRICTIONS OR REQUESTS:
 SPECIAL WASTE HANDLING REQUIREMENTS:
 OTHER COMMENTS OR REQUESTS:

J. BIENNIAL / ANNUAL REPORTING INFORMATION

SIC CODE	SOURCE CODE	FORM CODE
K. SAMPLE STATUS	YES	SAMPLED BY
REPRESENTATIVE SAMPLE HAS BEEN SUPPLIED.	NO	DATE SAMPLED
		WHERE SENT

GENERATORS CERTIFICATION

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I also certify that any samples submitted are representative of the actual waste. If Clean Harbors discovers a discrepancy during the approval process, Generator grants Clean Harbors the authority to amend the profile, as Clean Harbors deems necessary, to reflect the discrepancy.

AUTHORIZED SIGNATURE NAME (PRINT) TITLE DATE

GENERAL INFORMATION

GENERATOR EPA-ID:
GENERATOR CODE (Assigned by Clean Harbors)
ADDRESS

GENERATOR PROFILE No.

GENERATOR NAME:

CITY

STATE
PHONE:

ZIP/POSTAL CODE

CUSTOMER CODE (Assigned by Clean Harbors)
ADDRESS

CUSTOMER NAME:

CITY

STATE/PROVINCE

ZIP/POSTAL CODE

B. WASTE DESCRIPTION

WASTE DESCRIPTION:

PROCESS GENERATING WASTE (Please provide detailed description of process generating waste):

C. PHYSICAL PROPERTIES (at 25C or 77F)

PHYSICAL STATE SOLID WITHOUT FREE LIQUID POWDER MONOLITHIC SOLID LIQUID WITH NO SOLIDS LIQUID/SOLID MIXTURE % FREE LIQUID % SETTLED SOLID % TOTAL SUSPENDED SOLID SLUDGE GAS/AEROSOL	NUMBER OF PHASES/LAYERS 1 2 3 TOP MIDDLE % BY VOLUME (Approx.) BOTTOM			VISCOSITY (If liquid present) 1 - 100 (e.g. WATER) 101 - 500 (e.g. MOTOR OIL) 501 - 10,000 (e.g. MOLASSES) > 10,000		COLOR			
	ODOR NONE MILD STRONG Describe:		BOILING POINT °F (°C) <= 95 (<=35) 95 - 100 (35-38) 101 - 129 (38-54) >= 130 (>54)		MELTING POINT °F (°C) < 140 (<60) 140-200 (60-93) > 200 (>93)				
	TOTAL ORGANIC CARBON <= 1% 1-9% >= 10%								
	FLASH POINT °F (°C) < 73 (<23) 73 - 100 (23-38) 101 - 140 (38-60) 141 - 200 (60-93) > 200 (>93)		pH <= 2 2.1 - 6.9 7 (Neutral) 7.1 - 12.4 >= 12.5		SPECIFIC GRAVITY < 0.8 (e.g. Gasoline) 0.8-1.0 (e.g. Ethanol) 1.0 (e.g. Water) 1.0-1.2 (e.g. Antifreeze) > 1.2 (e.g. Methylene Chloride)		ASH < 0.1 0.1 - 1.0 1.1 - 5.0 5.1 - 20.0 Actual:		BTU/LB (MJ/kg) < 2,000 (<4.6) 2,000-5,000 (4.6-11.6) 5,000-10,000 (11.6-23.2) > 10,000 (>23.2) Actual:
VAPOR PRESSURE (for liquids only) mm Hg									

D. COMPOSITION (List the complete composition of the waste, include any inert components and /or debris. Ranges for individual components are acceptable. If a trade name is used, please supply an MSDS. Please do not use abbreviations.)

CHEMICAL	MIN -- MAX	UOM	CHEMICAL	MIN -- MAX	UOM
----------	------------	-----	----------	------------	-----

ANY METAL OBJECTS PRESENT?

YES NO

If yes include dimension:

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

LAND PROTECTION DIVISION

(405) 702-5100 /Fax (405) 702-5101

DISPOSAL PLAN APPLICATION FOR A ☐ **CONTINUOUS**

☐ **ONE TIME**

GENERATOR'S EPA ID NO:

☐ New Plan ☐ Amendment to Disposal Plan ☐ Amendment to existing waste stream No.: _____

Business/Plant Name _____

Plant Address/Location _____ City _____ State _____ Zip _____

Mailing Address _____ City _____ State _____ Zip _____

Plant Contact _____ Title _____ Telephone _____

DETAILED WASTE DESCRIPTION

Waste-Name _____

EPA-Waste _____

Code(s) _____

Amount of Waste Produced

No. of Lbs. Frequency

Physical

☐ Liquid

☐ Sludge

☐ Solid

☐ Layered

_____ ☐ Day ☐ Week Chemical ☐ Ignitable (Flashpoint _____°F) ☐ Corrosive (pH _____) ☐ Reactive

☐ Month ☐ Year

laboratory analysis attached. (NOT INCLUDING ANALYSIS MAY DELAY DISPOSAL PLAN APPROVAL.) Material Safety Data Sheet(s) are acceptable for off-specification products only.

PROCESS GENERATING WASTE (SEE INSTRUCTIONS, USE ADDITIONAL SHEETS IF NECESSARY)

TSD INFORMATION (USE ADDITIONAL SHEETS IF NECESSARY)

Site receiving waste _____ Telephone () _____

Mailing address _____ City _____ State _____ Zip _____

Site location _____ EPA ID No _____

CERTIFICATION

The above information is accurate to the best of my knowledge. I will only use those transporters registered with the state of Oklahoma to pick up hazardous wastes within the State of Oklahoma or to transport hazardous wastes to an appropriate receiving facility in the State of Oklahoma.

Signature _____ Date _____

Person in charge of plant or plant contact

Typed or printed name _____

ahoma Generators Only. List county where waste is Generated:

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number		2. Page 1 of	3. Emergency Response Phone		4. Manifest Tracking Number				
		5. Generator's Name and Mailing Address									
Generator's Site Address (if different than mailing address)											
Generator's Phone:											
6. Transporter 1 Company Name							U.S. EPA ID Number				
7. Transporter 2 Company Name							U.S. EPA ID Number				
8. Designated Facility Name and Site Address							U.S. EPA ID Number				
Facility's Phone:											
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))			10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
					No.	Type					
		1.									
		2.									
		3.									
	4.										
	14. Special Handling Instructions and Additional Information										
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.											
Generator's/Offor's Printed/Typed Name					Signature			Month	Day	Year	
TRANSPORTER INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____										
	Transporter signature (for exports only): _____ Date leaving U.S.: _____										
	17. Transporter Acknowledgment of Receipt of Materials										
	Transporter 1 Printed/Typed Name					Signature			Month	Day	Year
DESIGNATED FACILITY	Transporter 2 Printed/Typed Name					Signature			Month	Day	Year
	18. Discrepancy										
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection										
	Manifest Reference Number: _____										
	18b. Alternate Facility (or Generator)					U.S. EPA ID Number					
Facility's Phone: _____											
18c. Signature of Alternate Facility (or Generator)											
Month										Day	Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)											
1.		2.		3.		4.					
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a											
Printed/Typed Name					Signature			Month	Day	Year	

ARCADIS

Appendix E

Model Restrictive
Covenant Language

**RECORDING REQUESTED BY AND
WHEN RECORDED RETURN TO:**

UNION PACIFIC RAILROAD COMPANY
ATTN: General Director-Real Estate
1400 Douglas Street, Mail Stop 1690
Omaha, Nebraska 68179

Space Above for Recorder's Use Only

**NOTICE OF ENVIRONMENTAL REMEDIATION ACTIVITY AND
ENVIRONMENTAL COVENANT RESTRICTING USE**

This Notice of Environmental Remediation Activity and Environmental Covenant Restricting Use ("Environmental Covenant") is executed this _____ day of _____, 20____, by Union Pacific Railroad Company, a Delaware corporation ("Union Pacific") and the United States Environmental Protection Agency ("USEPA") pursuant to the Nebraska Uniform Environmental Covenants Act, Neb. Rev. Stat. § 76-2601 *et seq.* (Supp. 2005) ("Act"). For purposes of recording this Environmental Covenant, Union Pacific is a Grantee.

RECITALS

A. WHEREAS, Union Pacific is the owner of real property recorded in Douglas County, Nebraska, and located in Omaha, Nebraska as legally described in Exhibit "A" attached hereto and incorporated herein by reference ("Premises").

B. WHEREAS, Union Pacific previously used the Premises to operate a railroad depot, maintenance facility and yard. The Premises have at one time included office buildings, buildings for the dismantling, repair or demolition of locomotives and railcars, paint shop, print shop, laboratories, warehouses and loading docks, chemical storage sheds, fuel and oil tanks, a wastewater treatment facility, a process sewer system, ditches, roads, rail spurs, rail yards, landfills and a hazardous waste container storage unit. Union Pacific is performing certain investigation and remediation activities ("Remediation") with respect to the contamination at the Premises pursuant to an Administrative Order on Consent, EPA Docket No. RCRA-7-2000- 0026, dated February 29, 2000, issued by USEPA under the authority of section 3008(h) of the Solid Waste Disposal Act, commonly referred to as the Resource Conservation and Recovery Act of 1976 ("RCRA"), as amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. § 6928(h).

C. WHEREAS, Union Pacific has submitted to USEPA, the "Agency" as defined by § 76-2602(2) of the Act, for its approval, a remedial action plan identified as "Corrective Measures Study for Operable Unit No. 2" and "Corrective Measures Study for Operable Unit No. 3," for the facility at 9th and Webster Streets, Omaha, Nebraska, RCRA NED000829754" in accordance with an Administrative Order on Consent, RCRA Docket No. RCRA-7-2000-0026. Whereas, upon USEPA's selection of Final Corrective Measures for Operable Unit No. 2 and Operable Unit No. 3 will constitute the remedial action plan, ("RAP as referenced in this covenant") located at

USEPA Region 7, 901 N. 5th, Kansas City, Kansas, and which constitutes an "environmental response project" under § 76-2602(5) of the Act pursuant to which this Environmental Covenant is created.

D. WHEREAS, Union Pacific is the Holder of this Environmental Covenant under §§ 76-2602(6) and 76-2603(a) of the Act and agrees that it may not assign its interest as Holder without express, written consent of the USEPA. Any assignment of this Environmental Covenant to a new Holder shall be treated as an amendment.

NOW THEREFORE, Union Pacific hereby declares, as Holder of this Environmental Covenant, that the Premises shall hereinafter be bound by, held, sold and conveyed, subject to the following terms, conditions, obligations and restrictions set forth herein, which shall run with the land, or any part thereof, in perpetuity, unless amended or terminated pursuant to Paragraph 7 below.

1. Purpose. The purpose of this Environmental Covenant is to ensure protection of human health and the environment by minimizing the potential for exposure to contamination that remains on the Premises, to comply with the (RAP as referenced in the covenant) and to ensure that the Premises are not developed, used, or operated in a manner incompatible with the Remediation. This Environmental Covenant will accomplish this purpose by minimizing or eliminating those activities that result in disturbing the ground surface, and by creating a review and approval process to ensure that any such intrusive actions are conducted with appropriate precautions to avoid or eliminate any hazards.

2. Application. The terms, conditions, obligations, and restrictions contained in this Environmental Covenant shall be binding on Union Pacific, its heirs, successors, assigns, and transferees, and all persons, corporations, or other entities, obtaining or succeeding to any right, title, interest or use in the Premises, or part of the Premises, after the effective date of this Environmental Covenant. All real estate, lots, or parcels located within the Premises, and any conveyance, transfer, lease or sublease covering or describing any part of the Premises, are subject to the terms, conditions, obligations and restrictions contained in this Environmental Covenant. Acceptance of any conveyance, transfer, lease or sublease of the Premises, or part thereof, shall bind each transferee, its heirs, successors, transferees, and assigns to the terms, conditions, obligations and restrictions contained in this Environmental Covenant during their respective period of ownership or occupancy, as applicable.

3. Rights and Obligations. Notwithstanding any conveyance of any interest of any portion of the Premises, Union Pacific shall at all times comply with the obligations set forth in the (RAP as referenced in the covenant) and this Environmental Covenant. This Environmental Covenant shall in no way amend, modify, limit or release Union Pacific from its duties under the (RAP as referenced in the covenant). Union Pacific will retain all of its rights and obligations under this Environmental Covenant regardless of whether Union Pacific retains ownership of the Premises or any real property adjacent to the Premises.

4. Activity and Use Limitations:

- a. The Premises shall not be used, developed or operated in any manner that violates any applicable state or federal laws, rules, and regulations and/or zoning requirements.
- b. The Premises shall not be used, developed or operated in any manner that will impair, degrade or compromise the Remediation performed pursuant to the (RAP as referenced in the covenant).
- c. The Premises shall not be used or developed for any day care, preschool, playground, athletic field, picnic ground, dormitory or nursing home purposes or for any residential purposes.
- d. The Premises shall not be used to treat, store or dispose of hazardous waste as defined in the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 *et seq.* ("RCRA"), any successor statute, and any rules and regulations promulgated under RCRA.
- e. Domestic, irrigation and other water wells of any type shall not be drilled or maintained on the Premises, except for groundwater monitoring wells and temporary dewatering wells for construction purposes. Groundwater beneath the Premises shall not be used as a source of drinking water or for other direct contact purposes, including fountains. No lakes or other surface impoundments are allowed on the Premises.

5. Easement. USEPA, Union Pacific, its successors and assigns, and any of their duly authorized agents and contractors have a permanent nonexclusive easement to enter or come on the Premises to monitor compliance with the terms of this Environmental Covenant. In addition, both Union Pacific and USEPA, its successors and assigns, and duly authorized agents and contractors, its successors and assigns, have a permanent, nonexclusive easement to enter or come on the Premises to:

- a. Perform any environmental investigation or remediation required by any federal, state, or local government agency, department, or other authority;
- b. Perform any maintenance or monitoring required by any agency; and
- c. Sample, repair, or reconstruct any environmental monitoring, investigation, or remediation systems.

Nothing in this Environmental Covenant shall limit or otherwise affect USEPA rights of entry and access as provided by state or federal law, rule or regulation.

6. Recording. This Environmental Covenant, and any amendments or termination of this Environmental Covenant shall be recorded in the Douglas County, Nebraska Register of

Deeds and indexed by the legal description of the Premises, as described in Exhibit A, attached hereto and incorporated herein by reference, within thirty (30) days after the date of the final required signature upon this Environmental Covenant. For purposes of indexing, Union Pacific, as Holder of this Environmental Covenant, shall be treated as a Grantee. Pursuant to § 76-2608 of the Act, Union Pacific shall also provide a copy of the recorded Environmental Covenant, and any amendments or termination thereof, to the Nebraska Department of Environmental Quality ("NDEQ") Remediation Section, 1200 "N" Street, Suite 400, P.O. Box 98922, Lincoln, Nebraska 68509.

7. Amendments and Termination. This Environmental Covenant is perpetual unless amended or terminated in writing, and such amendment or termination is signed by USEPA, Union Pacific, and all of the then-current fee simple title holders of the Premises subject to this Environmental Covenant, and duly recorded pursuant to Paragraph 6 above.

8. Compliance Reporting. Union Pacific, its heirs, successors, assigns, and transferees, shall submit to USEPA on an annual basis written documentation verifying compliance with the Activity and Use Limitations in this Environmental Covenant until such time this Environmental Covenant is terminated.

9. Enforcement Rights. The USEPA, Union Pacific, any person, corporation or other entity then holding title in and to the Premises or any part of the Premises, and their respective heirs, assigns and successors, each shall have the right to enforce the terms, conditions, obligations and restrictions contained in this Environmental Covenant and to proceed at law or in equity to compel compliance with or prevent the breach of this Environmental Covenant pursuant to § 76-2611 of the Act. Failure to exercise such rights of enforcement will in no event bar subsequent enforcement by any party, nor be deemed a waiver of any party's right to take an enforcement action. No right of action will accrue for or on account of the failure by any person, corporation, or any other entity to exercise any right created by this Environmental Covenant or for imposing any provision, condition, restriction, or covenant which may be unenforceable. The prevailing party in any action to enforce any provision of this Environmental Covenant is entitled to recover all costs of such action, including reasonable attorney fees.

10. Waiver of Certain Defenses. Union Pacific, on behalf of itself, its successors, assigns, and transferees hereby waives any defense of laches, estoppel, statute of limitations, or prescription.

11. No Liability. The Agency does not acquire any liability or obligation under state or federal law by virtue of signing this Environmental Covenant.

12. Nonwaiver. To the maximum extent permitted by law, this Environmental Covenant and the terms, conditions, obligations and restrictions set forth herein are not subject to waiver or abandonment due to the failure by any party to take enforcement, nor shall a waiver of a breach of any provision of this Environmental Covenant constitute a waiver of a subsequent breach of the same provision or any other provision

13. Severability. If any provision of this Environmental Covenant is found to be unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions shall not in any way be affected or impaired.

14. Captions. The captions in this Environmental Covenant are for convenience and reference only, and in no way define, limit, or describe the scope or intent of, or in any way affect this Environmental Covenant.

15. Controlling Law. This Environmental Covenant shall be governed and interpreted under the laws of the State of Nebraska.

16. Distribution. Pursuant to § 76-2607 of the Act, Union Pacific shall provide a file-and-date-stamped copy of the recorded Environmental Covenant to: USEPA; the City of Omaha; each person that signed the covenant; each person holding a recorded interest in the Premises; each person in possession of the Premises; each municipality or other unit of local government in which the real property is located; and any other person designated by USEPA.

17. Effective Date. The effective date of this Environmental Covenant shall be the date upon which the fully executed Environmental Covenant has been recorded as a deed record for the Premises with the Douglas County, Nebraska Register of Deeds.

Signature page follows...

IN WITNESS WHEREOF, Union Pacific Railroad Company, as the owner of the Premises and the Holder of this Environmental Covenant, and the United States Environmental Protection Agency, as Agency as defined in the Act, have caused this Environmental Covenant to be executed on this day of _____, 20__.

**UNION PACIFIC RAILROAD COMPANY, a
Delaware corporation**

By: _____
Its: _____

**UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY**

By: _____
Its: _____

STATE OF NEBRASKA)

) ss.

COUNTY OF DOUGLAS)

The foregoing instrument was acknowledged before me this _____ of _____, 20____,
by _____, who is the _____ of UNION
PACIFIC RAILROAD COMPANY, a Delaware corporation, and acknowledged said
Environmental Covenant on behalf of UNION PACIFIC RAILROAD COMPANY.

Notary Public

(SEAL)

STATE OF _____) ss.
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ of _____, 20____,
by _____, who is the _____ of the
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, and acknowledged said
Environmental Covenant on behalf of the UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY.

Notary Public

(SEAL)

EXHIBIT A

**LEGAL DESCRIPTION OF PROPERTY
TO BE ATTACHED**

ARCADIS

Appendix F

Field Inspection Form

Institutional Controls Inspection Checklist
Union Pacific Railroad — Omaha Shops Operable Unit No. 2

Dates and times of Inspection: _____

Inspector: _____
 Name Organization Title

Institutional Controls Checklist		Yes	No	Comments
1	Signs of unauthorized excavation or construction observed?			
2	Signs of illegal disposal of trash or other waste materials observed?			
3	Unauthorized use of the property for day care, preschool, playground, picnic ground, dormitory, or nursing home facilities observed?			
4	Unauthorized use of the property for residential use observed?			
5	Signs of unauthorized use of groundwater such as water wells observed?			
6	Signs of unauthorized use of surface water features such as man-made ponds or streams observed?			
7	Signs of unauthorized use of property for gardens or crop land observed?			
8	Vegetative covers (if installed) are in good shape and no not need maintenance?			
9	Were any visible deviations to the restrictive covenants observed?			
10				

Deficiencies:

Provide a description of any deficiencies and the efforts or measures that have been taken to correct problems:

Actions Required:

Provide a description of any additional institutional control requirements that may be necessary due to situations or activities observed during the field inspection:

Were photographs taken?

Yes ☐ No ☐

Signatures of Inspector(s): _____ Date _____
 _____ Date _____

Photographic documentation of field inspections is recommended.